RAILROAD GAZETTE

FRIDAY, FEBRUARY 7, 1879.

No. 6 Large Patent Car Mortiser and Borer.

BY J. A. FAY & CO., CINCINNATI, O.

The art of joining in wood construction is of considerable intricacy, and has connected with it various appliances and methods of connecting material into forms of strength and utility that are of interest to those concerned in the practical affairs of wood construction. The old system of performing all the work by hand has nearly passed away, and in its place has come the tireless accurate mechanism in its various forms, completing in the most exact manner almost any shape or detail desired.

One of the important elements in the construction of wooden frames is the mortise, and in some classes of framing these are so numerous that without mechanical appliances they would require such an outlay for manual labor as practically, by its cost, to prevent the production now essential for the wants of the various classes of business.

Mortising by machinery is not an innovation in mechanics, but the perfecting of the art to its present state has been the result of years of thought and experiment. The process has been gradual, and only those familiar with the development of this small branch of industrial work can appreciate the great changes made from the methods of the past.

We present with this an illustration of a mortising machine, which is an excellent example of the advanced state of the art in wood-working machinery, showing in the weight of its parts the great strength required for the purposes for which it is designed. This machine is constructed on the system of the graduated reciprocating stroke, and is in its operation peculiarly adaptable to mortising heavy material, and also where the bed of the machine requires to be kept stationary, as in hub mortising; but in car mortising, for which this machine is especially designed, it has all the elements for perfect operation, and is one of a series of machines for car manufacturing produced from the wood-working machinery works of Messrs. J. A. Fay & Co., of Cincinnati, O.

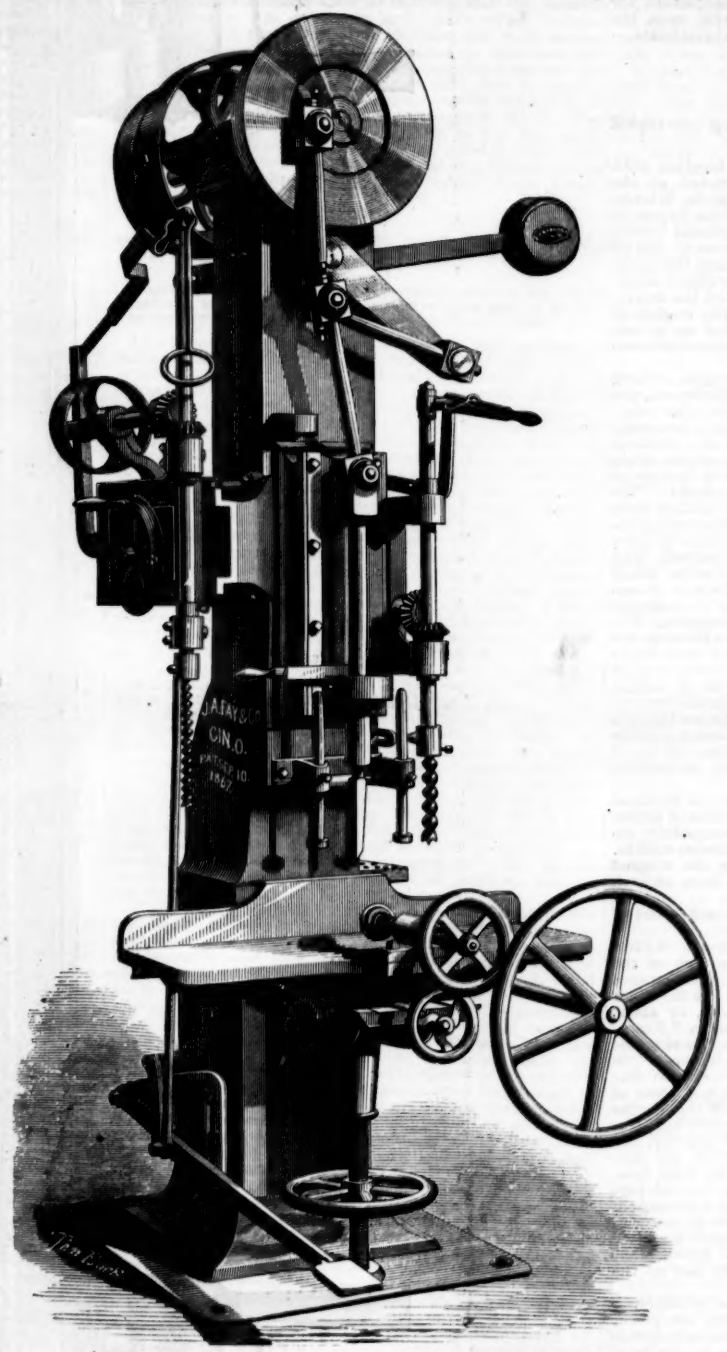
The support of the movable parts of this machine is a strong hollow column placed upon a substantial base, which gives it the stability required for the work to be done. The graduated vertical motion of the chisel is a peculiar feature of this machine, the connections being arranged so that, while the crank-wheel is in motion, the chisel may be at rest or reciprocating from this stationary point to the full stroke of the machine. The vertical motion of the chisel is governed in its action from the still point to the full stroke by a lever, which is operated by the foot. This lever is connected by a rod to an arm which is attached at the opposite end to a radial arm, which by its movement brings the connecting-rod attached to the crank-wheel more or less into a vertical position, thus placing the chisel at rest when the radial arm is vertical, and, when it is horizontal, the chisel is moving the distance of the throw of the crank-pin.

The impact of the blow of the chisel into the wood is prevented from reaching the foot of the operator by a counter-balancing weight and a frictional wheel in contact with a concave segment inside of the column, the contact on the wheel being regulated by a set screw.

The table is supported by a screw which projects through the base of the machine. This screw regulates the height of the table, which also governs the depth of the mortise. The screw has right and left-hand thread at either end, and is operated by a hand wheel.

There are two boring attachments, one of which is designed for boring for the mortise, the centre of the boring spindle being placed upon the same central line as the chisel bar. The other is intended to bore for bolts, and is adjustable to any point across the width of the table. The timber is clamped to the table by a screw, holding it against the back of the table. The table with its attached timber are moved longitudinally under the chisel by a hand wheel and rack, the length of the mortise being laid off on the timber. The chisel is reversed by a lever and held rigidly by it at right angles to the timber being mortised.

Further particulars can be had, by addressing the manufacturers, Messrs. J. A. Fay & Co., Cincinnati, O.



NO. 6 LARGE PATENT CAR MORTISER AND BORER.

(With Regular and Auxiliary Boring Attachments.)

Congress and Inter-State Commerce.

The Reagan Anti-Discrimination bill is now before the Senate. The fact that a measure of this description has been able to make its way through the Lower House of Congress is indicative of a tendency which may effect radical changes in the relations of American railways to each other and to the community. It is one of the most momentous steps ever contemplated by the national government, and will be found to involve far more than the provisions of the bill itself; for if Congress has the power to legislate on the subject of transportation at all, it may in the future interfere to a much greater degree than is now proposed. There has not been as yet any serious question of its constitutional right to enact regulations of some sort which shall govern each important public factor concerned in foreign and inter-state commerce; but serious doubts exist as to whether congressional supervision of railways might not lead to many new evils, worse in their effects than those which it is now sought through this means to cure.

We have not seen any formulated statement of the troubles which the proposed legislation is expected to remove, and probably none has been prepared. It is, however, well understood that a very intense feeling of dissatisfaction with railways pervades nearly all parts of the country. The causes for this bitterness, so far as they have been made public, are not the same everywhere, but the feeling in all localities differs rather in degree than in kind. Its most formidable manifestations until now have been the railway strikes and riots of 1877, and the rash and ill-considered Granger legislation of some years since. These were ugly symptoms, and to any careful observer were sure evidences of social disease, which, if not cured or ameliorated, would certainly again reveal itself in other and perhaps more destructive ways; but it has been and is extremely difficult to define the nature of the sickness, and hence almost impossible to secure any agreement upon suitable remedies.

Before judging whether Congress can be safely looked to for help, it would seem but prudent to have the whole subject laid bare; to expose to public view and to public discussion the railway customs which have irritated such multitudes into a craving for relief so imperative as to override their customary reference for law. Conservative people deprecate present legislation further than to provide for intelligent investigation by a committee of carefully selected experts, under due national authority. In truth, however, actual legislative regulation, up to a certain point, is an essential preliminary to successful investigation. Congress must go so far as inflexibly to require absolute and continual publicity upon the part of railways, in all matters which concern their relations with the general public, before any certain knowledge can be gained, even through experts, of what is actually done in the way of discriminations. Plausible reasons can be urged against such publicity: It will be a revelation of policy to rivals, which is rarely a wise candor. The time requisite to make and announce tariff changes may and often will drive trade into channels which can act more promptly. But neither these reasons nor any others that can be produced against enforced publicity can, in our judgment, compare in strength or weight with the arguments in its favor. The secrecy which now veils all important railway business may almost be deemed the actual parent of most objectionable railway practices, so powerful are the opportunities for and temptations to folly, and worse than folly, permitted by its virtually impenetrable shelter.

Perhaps as glaring an evil as any which it stimulates is that disastrous exaggeration of wholesome competition known as a "Railroad War." All evils are but variations from a just middle course, wise in itself and good in its effects. Competition, within proper limits, is such a middle course. Monopoly is one evil extreme, and a mad commercial contest (not yet provided with a single distinctive name) is the other. Either extreme is full of harm to any community. As between the railway anarchy which has worked so much commercial injury for many years and the risks of a monopoly through combination, such students of the subject as Adams and Fink unhesitatingly prefer the latter; and they are undoubtedly right. If no better way can be found, we should welcome combination as at least promising a mitigation of some of the worst of our evils.

To persons familiar with railway history there is something monstrous in the daily effects of secrecy. A typical instance will better illustrate this than pages of description. The chief commercial officer of a railway, whatever his title, soon learns that his leading duty is to watch and outwit unscrupulous competitors. Perhaps a million bushels of wheat are to be moved from Chicago to New York. A convention of competitors (just adjourned) has resolved upon new rates, which are to be "firm" by all of their routes; but shipping is slack, empty cars are accumulating in the Chicago yards, and the shipper is wiser in his generation than railway officials. He calls on the agent of one of the roads, announces the magnitude of his proposed shipment, looks at the new rate and returns it with a gentle sneer, which is weighty with unexpressed pity for the innocent faith of his listener. "Your road is my choice, Billy, and on an even keel you shall always have my trade; but the fact is I can do better. Don't ask any questions; I can't answer them. It's not my interest to give away my friends." "Billy" is disturbed. He is not sure whether the shipper is lying or really has been offered a "cut;" but he is quite sure that "Tom," who solicits for the Fort Wayne, or "Joe," who is agent for the Blue Line," will "scoop this big lot" if he does not. At a critical moment like this, "Billy" sees with wonderful clearness how faulty is the organization of his company, which leaves him stranded, as it were, for lack of power to act instantly and on his own judgment alone. What weight have such considerations as conventions, agreements, policies, or even net earnings, on "Billy's" mind at such a crisis? None whatever. He even forgets that his road has just emerged from a six months' desperate struggle, stripped of much profit and staggering toward bankruptcy. It is nothing to him that his president has, through tribulation and unsavory concessions, helped frame, as a peace treaty among the recent foes, this agreement on which the ink of the signatures is not yet dry. He only feels the imminence of that danger which, as soliciting agent, it is his specific function to avert. He begs the shipper for an hour's grace, and telegraphs his general manager (one of the signers of the agreement) that Jones has two thousand car-loads to ship, and has been offered "a cut," but will not say how much or by whom. He testifies earnestly to the veracity of Jones, though he has frequently known him to lie to gain a trifle.

The manager has no trust in the sanctity of the agreement or the good faith of its signers. Previous experience and his own practices have destroyed all such faith. Two thousand cars are a huge lot for dull times. The coveted authority is presently given, with strenuous injunctions to guard against the matter "getting out." "Billy" pledges the shipper to a willing privacy, grants the "cut," and, with a deftness only gained by long practice, arranges all the details of its payment, so that if suspicion and accusations arise, the charge can be denied with literal truth. The regular public rates will be collected, and all the freight records will accord with the agreement; but perhaps 20 per centum of the weight in each car will be omitted from the manifest, or five cents per hundred will be allowed as back charges, or paid for some ostensible service never rendered; or possibly payment may be deferred till the rival railways shall have made their charges, and, after receiving an indignant plea of not guilty, dropped them for lack of proof. But the cheated roads are too clearly aware that the denial is only Pickwickian, and take the earliest chance to "get even" with their neighbor. Within a fortnight from its execution the agreement, obtained with so much difficulty, is as useless as a last year's almanac. The result of one such act, at the instance of a local agent, zealous, according to his light, for the interest of his company, has frequently cost the railways affected a round million of dollars without producing any offsetting good to the community. Enforced publicity in tariffs would go far toward making such calamitous actions impracticable.

It may be asked why under such circumstances the conservative and restraining power of railway directors and shareholders is dormant. Unfortunately, while they have power they lack knowledge. Few shareholders could judge such a case intelligently if spread fully before them; but this class of actions are seldom submitted even to directors. It is not extravagant to say that the chief commercial officer of any large American railway can make in any month a difference of from one to three hundred thousand dollars between the actual earnings and the earnings as they would have been at the rates avowedly charged; and can do this without the knowledge of any one but the chief accounting officer, to whom his order is commonly law. In the main it it probable that secret concessions are honestly made, and solely with a view to the best interests of the railway. It may also be fairly granted that so long as any carrier re-

tains the power to and does give them, it will be frequently essential that rival carriers should meet such action by imitation. But the uncontrolled power to make concessions is a fearful possession, even when resting in honest and capable hands, and full of dangerous temptations to any venal or weak-principled custodian. If a shipper can induce such an officer to let his real car-load of lumber be thirty thousand pounds, and the weight charged for but twenty thousand, he can afford to share his illicit gains with the obliging official. If trade is heavy, such perquisites to the latter would soon exceed his moderate salary. Should his conscience balk at a direct division of the spoils, some speculation in lumber is easily devised, the fortunate issue of which the prudent shipper takes good care shall be well assured to his thrifty patron.

To the shareholders in railways full publicity is the only basis for sure protection against such designed or blundering spoliation. To directors who conscientiously haggle over a few dollars uselessly spent on the equipment of an office, and who honestly strive to guard faithfully the interests intrusted to them, publicity is the only potential check to these vast flows from the bung-hole which they helplessly and, in the main, ignorantly permit. To the community, who feel the oppression of favoritism and discrimination, absolute publicity is essential, in order that from a knowledge of what discriminations are actually made a reasonable judgment may be formed of what can safely be permitted. If the bill now pending should result in a law which, through effective provisions and penalties, ensured the destruction of every form of secrecy in relation to railway compensation for every kind of service, it would confer benefits upon the country far beyond the power of any one now to estimate.—*The Nation, Jan.* 30.

Twin-Locomotive.

The following description and the engraving are copied from *Engineering:*

We give this week a two-page engraving, together with other views,* of a twin-locomotive constructed at the Schweizerischen Locomotiv und Maschinen-fabrik, Winterthur, for a tramway between Villa Real and Villa Regoa, in Portugal, this line being about 21 miles in length and having gradients of 1 in 12½, as well as reverse curves of but 25 meters (82 ft.) radius. The line, we may add, is of 0.9 meter (35.43 in.) gauge and is laid with rails of the ordinary tramway section. It was originally intended to work the line by mules, but this being found impracticable, the engine of which we now give engravings was constructed as an experiment, and it has, we understand, proved thoroughly successful.

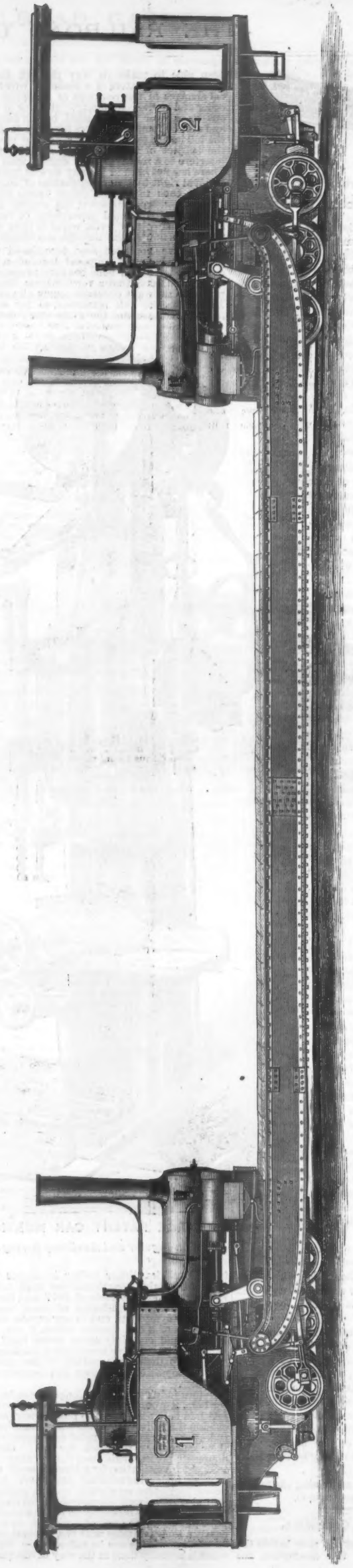
As will be seen from our illustrations, the engine, which was constructed from the designs of Mr. Charles Brown, the manager of the Schweizerischen Locomotiv und Machinenfabrik, includes some very novel features. It consists practically of two six-wheeled tank engines placed at a distance apart of 38 ft. from centre to centre, of the middle axles, and having slung between them a strong iron bridge or frame, on which the load to be carried can be placed. This frame consists of two substantial plate girders 17.7 in. deep and properly braced together, these girders supporting between the engines a platform 26 ft. 7½ in. long by 5 ft. 10⅞ in. wide, on which a load of 15 tons can be carried. The two girders are connected at each end by a cross-bar fitted with cupped bearings for the spherical ends of a pair of suspending links, these links extending upward to spherical bearings at the tops of the side tanks of the engines. The platform is 2 ft. 2.4 in. above the rail level, and the links by which it is suspended at the ends (and which are each fitted with the means of adjustment for length) are about 4 ft. 4 in. long, so that the engines are left very free to adjust themselves to curves, while any tendency of the platform to lateral oscillation is prevented by a pin which passes through the centre of each end cross-bar of the bridge, and a suitable frame on the tank of the corresponding engine. It is, of course, through these pins that the hauling or pushing power of the engines is also transmitted.

The two engines connected by the bridge are of identical dimensions, and they are of a type to which we have before alluded in this journal, as having been very successfully introduced by Mr. Brown. Each engine has cylinders 8.66 in. in diameter, and 12.8 in. stroke, while the six coupled wheels are 23.62 in. in diameter, the tractive force of each engine thus being $\frac{8.66^2 \times 12.8}{23.62} = 40.6$ lbs. for each pound of effective pressure per square inch in the pistons. With a mean effective pressure of 100 lbs. per square inch on the pistons, the two engines would thus be capable of exerting a tractive force of $40.6 \times 100 \times 2 = 8{,}120$ lbs. On the other hand, the weight of each engine, empty, is 7 tons, or about 8½ tons in working order, while the bridge weighs 3.3 tons, and carries, as we have said, a load of 15 tons, making the total weight loaded $(2 \times 8.5) + 3.3 + 15 = 35.3$ tons. This load, of course is all carried by the coupled wheels, so that there is ample weight for adhesion even with a bad state of the rails. On such a tramway as that on which the engine has to work the resistances are probably not much less than 20 lbs. per ton, so that, including the effect of gravity, the total resistances for the above-mentioned load on the gradients of 1 in 12½ are probably nearly 7,000 lbs. This, however, is very much within the full power of the engine, particularly as the boilers are capable of carrying a pressure of 200 lbs. per square inch, and the mean effective pressure in the cylinders might thus be considerably higher than we have assumed above. As a matter of fact we believe that one engine is found almost sufficient to take the load up the steep gradients just mentioned.

It will be seen that the engines have the cylinders arranged completely above the level of the wheels, the power being transmitted from the piston rods to the connecting rods through the intervention of rocking levers, as in the tank locomotive, also constructed from Mr Browns designs. This system of construction has been extensively adopted by Mr Brown, and the results have been found very satisfactory; the rocking beams being provided with a very large bearing surface at their centers of oscillation, and the wear at this point being found inappreciable. The valve gear is also of the type designed by Mr. Brown, each valve spindle receiving its motion from a lever, of which the lower end is coupled to the connecting rod, while the upper end is guided in a straight line by an arrangement of parallel motion. The links constituting the parallel motion oscillate in centres carried by a cross-bar fixed on the end of the weigh-bar, the effect being that when this cross-bar is horizontal, the upper end of the lever to which the valve spindle is coupled moves in a vertical line. When, however, the weigh-bar is partially turned by the reversing lever, so as to bring the cross-bar into an inclined position, the upper end of the lever coupled to the valve spindle is caused to move in an oblique line, and the travel of the valve is hence increased just as it is by putting an ordinary link motion into full gear. The direction in which the weigh-bar is turned determines, as usual, whether the motion imparted to the valve is that for the forward or backward movement of the engine. The valves, it will be noticed, are arranged below the cylinders, and kept up to their faces by springs at the back.

The engine frames are very deep and constitute also the sides of the tanks. The axle-box guides on opposite sides of each engine are connected by transverse stays as shown, and

*The other views we have not copied.—EDITOR RAILROAD GAZETTE.



TWIN LOCOMOTIVE FOR THE VILLA REAL AND VILLA REGOA TRAMWAY (35.43-in. Gauge.)

Constructed at the Swiss Locomotive and Engine Works, Winterthur, from the Designs of Mr. Charles Brown.

the axle-boxes themselves are similarly connected, provision being made for insuring the fair bearing of the axle-boxes on the axles, notwithstanding any unequal play of the springs on the two sides of the engine. Each engine, it will be noticed, is carried on three points, there being a transverse spring at the leading end and a spring at each side having its ends bearing on the trailing and middle axle-boxes respectively. The axles are placed at equal distances of 2 ft. 2.6 in. apart, the wheel-base of each engine being thus 4 ft. 5.2 in. only, while the total wheel-base of the pair of engines with their connecting bridge is 42 ft. 6 in.

The fire-box shell is cylindrical and is carried a considerable height above the barrel of the boiler, the crown of the fire-box being about level with the top of the barrel, so that there is no steam space in the latter. The lowest water level is taken as 4 in. above the crown of the fire-box and the highest level as 14 in. above that crown, a working range of level of 10 in. being thus provided for, a great convenience in working on a hilly line. The diameter of the fire-box shell is 2 ft. 3.6 in., and that of the barrel (inside the smallest plate) 1 ft. 11.6 in., the barrel being inclined upward toward the fire-box casing, so as to allow of the escape of steam into the latter. The steam is collected by a series of finely perforated pipes radiating from a central casting at the top of the fire-box casing, a steam pipe communicating with the chamber of this casting passing out through a stuffing-box at the front of the fire-box casing to an external regulator valve as shown.

The fire-box is cylindrical at the lower part, the upper part, however, being flattened at the front side to form the tube-plate. The crown is slightly domed and is stayed directly to the crown of the fire-box casing. The tubes are 79 in number, and are 6 ft. 3 in. long by 1¾ in. outside, and 1.34 in. inside diameter. The chimney is 7.9 in. in diameter at the smallest part and the blast nozzle has a diameter of 2.17 in., or an area equal to one-sixteenth that of each piston. The chief proportions of the boiler are as follows:

	Sq. ft.
Heating surface: Fire-box	20.3
Tubes (external)	193.7
Total	214.0
Fire-grate area	3.98
Flue area through tubes	0.79
Least sectional area of chimney	0.34
Ratio of grate to heating surface	1 : 5.4
" fire-box surface to tube surface	1 : 9.45
" flue area through tubes to grate area	1 : 5.04
" least sectional area of chimney to grate area	1 : 12.7

We may add that the type of boiler we have been describing is one which Mr. Brown has entensively used for tramway engines and tank locomotives of small power, and we understand that the results obtained with it have been very satisfactory.

In addition to the ordinary brake blocks applied to the trailing wheels, the twin engines forming the subject of the present notice are fitted with a counter-pressure air brake arranged as follows: At the bottom of the blast pipe a double-faced valve is provided, this valve being so arranged that it can be raised by the lever shown, it, when so raised, closing the bottom of the blast pipe, and placing the exhaust passages of the cylinders in free communication with the air. To obtain the desired retardation, the engine is reversed and this valve opened, when the cylinders act as air pumps drawing in air through the opening uncovered by the valve just mentioned and forcing it back into the steam pipes. Thence the compressed air would, if the regulator valve was opened, pass into the boiler, but the regulator is made so that the valve can be held close down to its seat, and the escape of the compressed air is allowed to take place into the air through a cock specially provided for that purpose, the cock enabling the amount of the counter-pressure to be regulated as desired. Of the remaining features of these engines, it will be unnecessary that we should give any detailed description, and in conclusion we need only remark that the whole arrangement is well carried out, and that it forms an example of special locomotive design of very considerable interest.

The Ladies' Car.

When Mr. Pike. one winter morning in 1871, arrived at the Hudson River Railroad train, at New York, to take his passage for Albany, he found a placard hanging upon the car of his first choice: "Ladies' Car." And, on his trying the door, a brakeman in charge apprised him that the car was, by the rules of the company, reserved for ladies and gentlemen traveling with ladies. Nevertheless, Mr. Pike preferred that car. Reasons not given. Perhaps he was a ladies' man, or a fashions writer, and liked to sit where he could see the latest styles. Perhaps he could not find a seat by the window on the river side in the gentlemen's cars. Perhaps he liked to have his own way. At all events, he yielded to the brakeman for the moment, but watched an opportunity and slipped in. The brakeman was wroth at this. He seized upon the intruder and hustled him out forthwith, and, according to the narrative given by the latter, treated him with great and unnecessary violence, so that he was "greatly beaten, hurt, injured and wounded," and so forth. Out of this fracas a long lawsuit arose, the final decision of which, in the Court of Appeals, comes to hand in the latest volume of the reports. Upon the first trial, the passenger recovered $5,000 damages. The Supreme Court set that aside as excessive. On a second trial, the jury said $4,000. The Supreme Court refused to overset that, and the case went to the Court of Appeals, where the doctrine of the "ladies' car" has now been established, for this state at least.

Is that doctrine obsolete or old-fashioned? Has the "ladies' car" been altogether superseded by the Pullman and Wagner vehicles? Perhaps not everywhere. And if it were, the same questions would arise and the same rules would apply to setting apart "baggage" and "smoking" cars; to appointing separate ladies' and gentlemen's rooms at stations and upon ferry-boats, and, in considerable degree, though with some modification, to Pullman or Wagner cars. The points in the Pike case were, first, that the company had a right to set apart a ladies' car, and exclude single men from it. All the courts agree that this is the law. Such an arrangement is a reasonable regulation which carrying companies have the right to make, to secure the comfort and security of female passengers. A car—and, on the same principle, a waiting-room or cabin—may be set apart for ladies; and if reasonable accommodations are provided elsewhere for men unaccompanied, they have no ground to complain. Moreover, the right to make the rule carries the power to enforce it. The company was authorized to station a brakeman, with orders not merely to give the notice, but to put out intruders, also. And in so doing the brakeman acted in the company's business, and the company was responsible for his acts. Then, how could it be that the passenger recovered damages? Because the brakeman had acted, in the opinion of the jury, with unnecessary violence, and had injured the passenger more than there was any need of in expelling him. His authority was strictly limited to using such gentle and considerate force as would remove the intruder, without giving him any useless mortification, suffering or injury. In going beyond this, he made his employers liable for his excess, and whether there was an excess or not is for the jury to decide in such cases.

This general doctrine is taught in other decisions. In Wisconsin a man traveling alone could find no seat in the passenger cars, and stood up till he was tired. Then he rode a while in the smoking-car, but that made him sick. Then he got a brakeman to let him into the ladies' car, and there he was riding very comfortably when other officers on the train came and put him out. The court held that the company had the right to keep a separate ladies' car, but must be reasonable and moderate in carrying out the regulation. If one of the persons in charge had permitted the passenger to take a seat in it, that was leave which justified him, and others could not turn him out. The passenger in this case made a good point against the rule by proving that the very men who put him out were accustomed to ride in that car themselves, when their work on the train was done for a while; and the court said if the company did not enforce the rule against conductor and brakemen, it ought not to do so against passengers. In Iowa, the case went against the passenger. He was somewhat intoxicated when he forced his way into the ladies' car, and was rude and boisterous. Moreover, there were seats to spare in the ordinary cars. He was put out; and complained of unnecessary violence in this, that the conductor did not stop the train. The train was running at ordinary speed at the time, and the passenger claimed it was dangerous and legally wrong to force him across the platforms. But the court said there was no rule of law against it. Railway carriages have been improved so much in recent years that stepping from one car to another is comparatively safe; it is daily done by passengers without accident; and it is not necessarily negligent or unlawful to compel a misbehaving passenger to do it. The company had the right, by its agents, to put the unauthorized passenger out of the ladies' car; and it was for the jury to say whether they had done so in a manner which was improper in the circumstances.—*New York Times, Feb.* 1.

Influence of Railroad Service in Developing Manly Traits of Character.

[Remarks of C. L. Heywood, late Superintendent of the Fitchburg Railroad, at the reception of the steam railroad men of Boston by the Young Men's Christian Association, Jan. 29, 1879.]

In my invitation to say a few words, at this meeting of railroad men, I was requested to refer among other topics of interest, to the "influence of the railroad service in developing manly traits of character." I can speak of its effects as it appears to me, in reviewing my own experience of about thirty-five years of such service, during which time I attempted to fill as best I could, some half-dozen positions; from one of the least importance to others of a higher grade. In reviewing the history of that space of time with my associates in the several positions the apparent influence each have exerted over the character of others, I realize individual responsibility reaching far beyond a simple duty to the railroad company. I know of no employment where more or greater temptations are offered to lead men astray than are constantly placed in the path of men in nearly all the grades of the service; and on the other hand, where so many opportunities occur for showing heroic and manly traits. I refer more particularly to that large class—the train men, including the engine men whose duties call them from their families or home, thus losing that powerful influence for good. This class are exposed to great hardships, and dangers, not only from the elements but to constant danger from accidents. I will read a single incident of recent date: "New York, Jan. 3, 12 m. Thermometer indicates 7° below zero; two brakemen on freight trains were frozen to death. At Buffalo, the wind is blowing 40 miles per hour, the storm blocking the railroads." Of course the men are exposed and scattered along the line some hundreds of miles from their homes. Sometimes without food or money. The list of even such recent exposures, suffering and loss of life is too long and sad to recall. From this class I have witnessed many deeds of great courage and heroism to prevent accident, and as great devotion and tenderness in the care of passengers and each other, in cases of accident, sickness and danger.

While we justly honor the city fireman, who risks his life and health in his efforts to protect our dwellings and property, also the sailor and soldier in their efforts to protect our homes and country from domestic or foreign foe, while these disabled men are very properly remembered and provided for in sickness and injury, let us not forget, but suitably provide for, the railroad men, who spend their lives in equally hazardous, brave and heroic service. The list of such disabled worthy men of recent date would fill more than one large hospital. It is the chief of our fire department, the officer in time of war, and the superintendent of the railroad that know where the just credit belongs for a large share of the credit of success often lavished upon them when successful; and in this connection I am glad to refer to an official act in the right direction. The President of the New York Elevated Railroad recently invited all the conductors and engine-men to meet the Rev. Dr. Tyng, Peter Cooper, William E. Dodge and others, at his residence, entertaining them with dinner and speeches, then thanking them for their efficient and faithful services on the road. I will refer to another. The following circular from the Superintendent of the road is dated Jan. 1: "Adam O'Neill, after nine years' service as Track-Master of the Southern Central railroad, for reason of ill health, has resigned his position. I take this occasion to publicly testify to his ability, trustworthiness and the faithful performances of all his duties."

I am also glad to mention that large numbers from all grades of the service are appropriating a portion of their wages to insure themselves against sickness and accident, instead of worse than wasting their incomes for strong drink and tobacco. And may I not here ask the question: Have not the executive officers and heads of departments a duty to perform by way of example? If not, I will venture to say that our responsibility is the same in either case, and that such officers, the stockholders, the passengers, and the public, will value our services all the more if we commence at once and continue to do but our duty, without such example.

There is another class I cannot pass by without special notice, which includes station agents, telegraph operators, watch, gate, draw, signal, switch and track-men—nearly all much exposed to the elements, and the faithful services of all very essential to the safety of the trains. This large class, as a rule, receive a small income compared with their responsibility. I trust they will not be overlooked on the return of business prosperity. As every link in the chain is being tested every hour by its weakest parts, therefore, when each grade fully appreciates the services of the other, then there will be no occasion for strikes with all the attendant evils.

I am glad to testify to the great improvement in the moral and religious standing of railroad men in society, and that so much interest has been manifested in them by the religious world. Our thanks are due this institution for the pleasure, and, I trust, profit of this gathering, for the more intelligent, moral and truly religious the service possesses, the better for themselves, their families, and the railroad company. I am also glad to recall the great improvements adopted within a few years by railroad managers, which has added much to the efficiency, and to the safety of the employés and travelers; among which is the telegraph, safety-platform for passenger cars, the power-brake, steel rails, wheels and tires, and as a rule a regular system of promotion, instead of appointing friends or relatives of the officers to important positions.

The state has given us the railroad commission, and many of their suggestions have been adopted. Their annual examination of the bridges and all other parts of the road has accomplished much good; great care is taken to have the road safe and in all respects in a commendable condition. Among the improvements and economies of the near future, I will venture to name an improved freight-car coupling; nearly all of those now in use are a fruitful source of accidents; and on through express trains, at least, a suitable power-brake; the Miltimore safety axle, with independent wheels; the rail system of electric block signals; gas light for lighting and heating passenger cars, without danger from fire in case of accident; shelter and protection for freight train men when on the road, and suitable resting and reading rooms for their comfort and improvement when waiting for their delayed trains. And when every person in the service will cheerfully obey all orders for safety, and endeavor to faithfully perform every duty assigned him, then we shall not expect such accidents, or rather such criminal neglect, resulting in great loss to life and property which have of late occurred in this and other parts of the country.

We have had our attention called to a recent invention by Miss Hosmer, also an important improvement by Mrs. Walton, which has been adopted on the New York Elevated Railroad, for lessening the noise caused by the movement of trains, and I most cheerfully welcome woman to aid us in any useful invention.

Then comes Mr. Edison with his pockets full of inventions, frightening the venerable gas stock-holders, causing a decline in one day of some 30 per cent., caused largely by the appearance of an article in a New York paper.

The modern inventors appear to know no reasonable bounds, they seem to have the extreme audacity to think they can catch and regulate the light that flashes from the "all-seeing eye," and convert it to public and private use; they are only equaled, if not surpassed, by reporters of the press in their enterprise to first obtain the items of such reported discoveries; they are, however, entitled to our thanks for constantly calling public attention to all kinds of improvements, tending to public safety in all modes of transit, thus lending their powerful aid in moving the world to a higher development.

The brief time allotted me has nearly or quite expired. I will close with a single other suggestion, and that is, there is one line of invention, with a single exception, that has been sadly neglected. I refer to the device in daily use, on nearly all the street railroad cars is this city, that announces in "sweet music of the bells" whenever an honest act has been performed by the official in charge. How refreshing amid so many crooked business and official transactions, to be so often and pleasantly reminded that we have in our very midst so large a number of honest public servants.

Transportation in Congress.

In the Senate Jan. 31:

Mr. Shields, of Missouri, was appointed a member of the Committee on Railroads, to fill the vacancy caused by the retirement of his predecessor, Mr. Armstrong.

Mr. Coke, of Texas, submitted a resolution requesting the Committee on Railroads to consider the bills with reference to railroads to the Rio Grande. Laid on the table to be called up thereafter.

In the Senate, Feb. 1:

Mr. Coke, of Texas, submitted amendments to Senate bill providing for the construction of a railroad from Galveston, Texas, to a point on the Rio Grande, opposite Camargo, in the Republic of Mexico. Ordered printed and referred to the Committee on Railroads.

In the Senate on the 4th:

Mr. Wadleigh, of New Hampshire, introduced a bill to protect life and property, and to prevent accidents and the delay of mails, on railroads and steamboats operated by steam-power within the jurisdiction of the United States. Referred to the Committee on Railroads.

Mr. Coke, of Texas, called up the resolution submitted by him on the previous Friday, requesting the Committee on Railroads to consider the Senate bills for the construction of a railroad from Galveston, Texas, to a point opposite Camargo, on the Rio Grande, and from San Antonio, Texas, to Laredo, on the Rio Grande. He spoke at length of the importance of these proposed roads. The resolution remains on the calendar.

Paying Employes by Checks.

The Chicago, Burlington & Quincy Company recently began this practice, concerning the working of which the Aurora (Ill.) *Beacon* says:

"It would be a little difficult for any one who watched the working of things yesterday to imagine what the railroad company gains by paying their men in this city by checks upon the Union National Bank, of Chicago. In the first place, some one has to make out the checks, thousands and thousands of them, a task of no small proportions—and every check must have a two cent stamp upon it. Then the Paymaster comes out with the checks, a process consuming about as much time as paying in currency. After that commences a run upon our banks, which seldom have on hand enough surplus currency to pay $20,000 or $30,000 in one day, while the railroad checks will aggregate $75,000 to $80,000. And again the men must take time out of the day to go to the bank, and wait at the counters for the money, and not a few of them for identification—besides paying the collection fee. The whole process is cumbersome and unsatisfactory to the men, while it must cost the company more than to pay in the old way. The plan is doubtless the theory of some man who has had no practice in the paying of large bodies of men, and it seems to us that a very little trial will satisfy the authorities that the old plan of paying is the better one. At small stations, where but few men are to be paid, it may be an advantage—but here, with from 1,500 to 1,600 men, it is very cumbersome."

American Institute of Mining Engineers.

The annual meeting of the Institute will be held in Baltimore, beginning Feb. 18, at 8 p. m. The sessions will be held in the small lecture room of the Academy of Music. Head-quarters for members will be at the Carrollton House, Light and German streets. A number of papers from prominent members are already announced.

Train-Accident Report—A Correction.

In our train-accident report for December appeared the following, taken, we believe, from a New Jersey local paper:

"On the evening of the 7th a car in a local passenger train on the Delaware, Lackawanna & Western road was thrown from the track at the west end of the Bergen Tunnel, N. J., by the breaking of a wheel."

We are informed that no such accident took place at West End or any other point on the road, and that the report was a mistake.

RAILROAD GAZETTE

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CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

CONTENTS.

EDITORIAL ANNOUNCEMENTS.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Addresses.—*Business letters should be addressed and drafts made payable to* THE RAILROAD GAZETTE. *Communications for the attention of the Editors should be addressed* EDITOR RAILROAD GAZETTE.

Advertisements.—*We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay,* EXCEPT IN THE ADVERTISING COLUMNS. *We give in our editorial columns* OUR OWN *opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.*

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.*

THE FREIGHT CAR OF THE FUTURE.

Last week some space was devoted to speculation regarding "The Freight Locomotive of the Future." It may not be uninteresting to indulge in similar *a priori* reasoning with reference to freight cars.

Attention has been called so often to the economy which results from an increase of train load, that no time or space need be devoted to the discussion of the subject here. Any one who cares to know about it can do so by simply adding up the train expenses for a heavy and for a light train, and dividing the sum by the number of tons hauled, and then comparing *the cost per ton* of the one with the other. The reports of a number of railroads during the past few years also show, by practical experience, the economy effected by this means.

But it will be said that there is a limit to the economical increase of the length of a train, which is no doubt true; but the limit may be very much extended, if the proper means be taken to do so—or rather, the carrying capacity within that length may be very much increased. To illustrate this, let us take the pattern of box-car built generally fifteen or twenty years ago, which, for convenience of reference, we will designate as pattern A, which was of about the following weights and dimensions;

Weight of pattern A car	17,500 lbs.
" " load carried	20,000 "
" total	37,500 "
" per wheel	4,687 "
Length of car-body, outside	26 ft.
Width " "	8 "
Height from top of floor to rafters	6 "
Cubical contents of car	1,158 cub. ft.
Length from centre to centre of links	30 ft.
Diameter of wheels	30 in.
Size of journals	3¼×6 "
Area of bearing surface of journals	19.5 sq. in.
Load required to break off journal (breaking load)	56,127 lbs.

(These dimensions and weights are all given together, so that they can easily be referred to; some of them will not be discussed until further on.)

As the length of these cars is 30 feet, and their total weight 20,000 lbs., the load per running foot, or per foot of track, will be 1,250 lbs., so that, if the train weighs 1,000 tons (of 2,000 lbs.), it would be 1,600 feet long.

Let us compare with this a pattern of car, which we designate as B, that is now coming into vogue. Its dimensions and weights are about as follows:

Weight of pattern B car	20,000 lbs.
" " load carried	30,000 "
" total	50,000 "
" per wheel	6,250 "
Length of car body, outside	29 ft.
Width " " "	8 ft. 8 in.
Height from top of floor to rafters	6 ft. 6 in.
Cubical contents of car	1,473 cub. ft.
Length from centre to centre of links	32 "
Diameter of wheels	33 in.
Size of journals	3¾ × 7 in.
Area of bearing surface of journals	26.25 sq. in.
Load required to break off journal (breaking weight)	74,014 lbs.

The weight per foot of track, or per running foot, with such cars will be 1,562 lbs.; so that a train weighing 1,000 tons would occupy only 1,280 instead of 1,600 feet, as it would if made up of pattern B cars.

We will not attempt to show what the economical limit to the length of trains is. This will depend on a great variety of circumstances. On the New York Central four-track road, where special tracks are devoted to freight traffic, and where through trains seldom or "hardly ever" are obliged to go on a side track, a much greater number of cars might be taken probably than on any other road. In local or way traffic, where more or less switching must be done at nearly all stations, it would become difficult to handle a great number of cars. In the *Railroad Gazette* of Oct. 11 of last year, an account was given by a correspondent of a train consisting of 183 empty eight-wheeled cars and one loaded car, one dead engine and two cabooses. It was 5,904 feet (nearly a mile and an eighth) long, and its weight was 3,964,000 pounds. It was made up of two trains, the engine of one of which had become disabled. Such trains, it will be said, and perhaps truly, would, in ordinary traffic, become very unwieldy and be a prolific cause of accident, delay and expense. Let all this be granted, yet if we assume any length of train as the economical limit of size, the train-load may still be increased by making the carrying capacity of the cars greater. Thus, suppose it is assumed that a train of cars must not exceed 1,600 feet in length. Now if such a train is made up of what have been described as pattern A cars, which are 30 feet long and carry 20,000 lbs., or 666.6 lbs. of freight per running foot of track, then our train-load will be $1,600 \times 666{\cdot}6 = 1,066,666$ lbs. If on the other hand the train is made up of pattern B cars, which carry 30,000 lbs. in a length of 32 feet, or 937.5 lbs. per running foot, then our train-load will be $1,600 \times 937.5 = 1,490,000$ lbs. Suppose now that we want to increase the train-load to 2,000,000 lbs. without increasing the length of the train. To do this our cars must have a carrying capacity of 1,250 lbs. per running foot of track. Let us see whether it would be practicable to build such cars.

Instead of making the car-body 29 ft. long, we will make it 36 feet, so that the whole length it will occupy on the track, measured from centre to centre of links, will be 40 ft. The cap acity of such a car must then be $1,250 \times 40 = 50,000$ lbs. This, for convenience, we will call our pattern C car. Now, how heavy must it be to carry this load? By referring to the weights of the old pattern A car, which weighed 17,500 lbs., it will be seen that it carried a little more than 1⅛ times its own weight. Pattern B car weighs 20,000 lbs., and carries one and a half times its own weight. There can be little doubt but that as we increase the size of a car we diminish the proportion of the dead weight carried. There is doubtless a limit to this, but it may, so far as the present speculation is concerned, be disregarded. There is a number of the parts of cars whose weight is increased very little by enlarging its carrying capacity. The brakes, for example, would weigh very little more for a car carrying 30,000 lbs., than for one whose capacity is only 20,000 lbs. The same thing is true of the attachments to the cars, such as running boards, steps, ladders, handles, journal-box covers, etc. The size and weight of the roof, sides and ends does not increase in nearly the same proportion as the carrying capacity, the one being about in proportion to the cube of their dimensions and the other to their square. It may then be assumed that a car to carry 50,000 lbs. may be built which will weigh only 25,000 lbs. Even if this should not be exactly true, it will not vitiate the inferences, which it is intended to draw from these speculations.

In order to carry such a car, let us see what will be needed. The size of the journals of the pattern A car, as given above, is 3¼ × 6 in. and the wheels 30 in. in diameter. It is true that on many such cars 33-in. wheels have been and are still used, but 30-in. wheels with that size of journal and weight of car have given very good results, and, therefore, it will be safe to base any inferences on such practice. The effective wearing surface of a journal is that measured by its length multiplied by *its diameter*, and not its semi-circumference, as is often supposed. The wearing surface of this journal is, therefore, 19.5 square inches, or 4.16 square inches per 1,000 lbs of weight on the wheels.* The proportion of the diameter of the journal to that of the wheel is 3¼ to 30, or 1 to 9.2. This is a measure of the velocity of the rubbing surfaces at the journal. It is also important in such calculations to determine the strength of the journal, that is, its capacity for carrying a load. This may be done if we regard the journal as a semi-girder, or a beam supported at one end and uniformly loaded. The following formula for calculating the strength of such a girder loaded at its end, is given on page 52 of Stoney's book on the "Theory of Strains?"

$$W = \frac{\pi f r^3}{4 l}$$

In this W = the breaking load, $\pi = 3.1416$, f = the ultimate tensile resistance per square inch of the material, r = the radius of the journal, and l = its length. As the load which a semi-girder will carry, if uniformly loaded, is equal to twice that which it will bear if loaded at its end, the formula becomes:

$$W = \frac{\pi f r^3}{2 l}$$

Or, stated arithmetically, to get the breaking load of a journal, *multiply* 3.1416 *by* 50,000 *and the product by the cube of its radius, and then divide by twice its length.*

The strength of the journal of pattern A car has been calculated by this rule, and is given above with the other data. It will be seen that it will require a static load of 56,127 lbs. to break it, or very nearly *twelve* times the load it must carry; in other words, it has a factor of safety of nearly 12.

The journals of pattern B car are 3¾ × 7 in., with an effective wearing surface of 26.25 square inches, and the load carried is 6,250 lbs., so that the number of square inches of wearing surface per 1,000 lbs. carried is 4.2 square inches, or very nearly the same as in the case of the pattern A car. The proportion of the diameter of the journals to the wheels is 3¾ to 33, or 1 to 8.8, instead of 1 to 9.2, as in the other case, showing that a 3¾-in. journal is somewhat larger, relatively, to a 33-in. wheel than one 3¼ in. is to a 30-in. wheel. The breaking load of the 3¾ × 7 in. journal is 74,014 lbs., and, as it carries 6,250 lbs., it has a factor of safety of 11.84. It will thus be seen that the 3¾ × 7-in. journal is not quite so strong, relatively to the load it carries, as the one 3¼ × 6 in. is to its load. One of the arguments urged against the use of the Master Car-Builders' standard axle is that the journal is too large and unnecessarily strong. If it is larger than necessary for cars which weigh, loaded, 50,000 lbs., then journals 3¼ × 6 were also very much too big for cars whose weight was 37,500 lbs. The breaking load of a 3½ × 7 in. journal, a size adopted on a number of roads, is only 60,138 lbs., which, with a car of 50,000 lbs. weight, would give a factor of safety of only 9.6. Doubtless many who have been in the habit of regarding factors of safety of 5 and 6 for bridge work, will be surprised at figures of double that magnitude, but it must be remembered that an axle journal is subjected to shocks and strains many-fold greater than any which a bridge must bear.

It is true that the velocity of the rubbing surfaces with a journal 3¾ in. diameter and a 33-in. wheel is greater than that of a 3¼-in. journal and a 30-in. wheel. But it will be noticed that the wearing surface, in proportion to the load carried, and the factor of safety of the journal, are about the same in both cases. This indicates that the journal is about the right size, but that the diameter of the 33-in. wheel is not quite large enough. It should be 9.2 times the diameter of the journal, or 3¾ × 9.2 = 34½ in. In other words, with a 3¾-in. journal we should have a 34½-in. wheel.

The capacity of a car for certain kinds of freight is often determined by its cubical contents, or the space inside. The cubical contents of pattern A car, allowing the sides and ends to be 4 in. thick, is 1,158 cubic feet, or 57.9 cubic feet per 1,000 lbs. of freight. That of pattern B car is 1,473 cubic feet, or 49.1 feet per 1,000 lbs.

To make a car which will carry 50,000 lbs. of freight and will weigh 25,000 lbs., and which consequently would have a weight on each wheel of 9,375 lbs., we should have an effective wearing surface on the jour-

* In order to get the load carried by the journals exactly, the weight of the wheels and axles should be deducted from the total weight of the car. As great exactness is not aimed at, the whole weight of the car is taken as the load on the journals.

nal of 39 square inches; the journal should require a load of $12 \times 9{,}375 = 112{,}200$ lbs. to break it; the wheels should be not less than 9.2 times the diameter of the journal; and the car-body should have inside a space equal to about 2,895 cubic feet.

Let us see whether the construction of such a car would be practicable. At present, freight cars are made from 8 ft. to 8 ft. 6 in. wide, whereas passenger cars are made as much as 10 ft. 6 in. There is no reason then why a freight car may not be made 10 ft. wide. If it is made 36 ft. long, 10 ft. wide and 8 ft. 6 in. high inside, it would have about 2,800 cubic feet of space, or 56 feet per 1,000 lbs of freight. If the journals were made $4\frac{5}{8}$ in. diameter by $8\frac{1}{2}$ in. long, they would have an effective wearing surface of 39.3 square inches, or 4.2 per thousand pounds carried, and would require a load of 114,123 lbs. to break them, so that the factor of safety would be over 12. The wheels would require to be $9.2 \times 4\frac{5}{8} = 42\frac{1}{2}$ in. diameter. The condition would no doubt be fulfilled nearly enough by the use of 42-in. wheels. Whether cast-iron wheels would give satisfactory results under such loads is perhaps doubtful, but if they are not strong enough, steel-tired wheels, which are being constantly diminished in cost, could be used instead. The weight per wheel would still be considerably less than that on the driving-wheels of locomotives.

There are a great many advantages, which suggest themselves, in the use of such cars. In the first place their carrying capacity would be double, or nearly double, their weight. Their cost would be less than the proportion of their carrying capacity. That is, one car to carry 50,000 lbs. of load would cost less than twice as much as two cars to carry 25,000 lbs. each.

The cost of maintenance, too, would be materially diminished. Thus the exposed surface of a car of this capacity would be very much less in proportion to the load carried than it would be in smaller cars. The deterioration of paint, decay of wood and corrosion of metal would thus be relatively much less.

The expense of lubrication would be diminished, because the leakage from one large box would be less than from two small ones.

Small repairs, as they are called, would also be reduced very much, because many of the attachments and appendages of cars would be the same on a big car as on a little one.

Appliances which cannot be used now on account of their cost might be adopted if the number required was reduced in inverse proportion to the carrying capacity of the cars. Thus continuous train brakes are not used in freight trains now, because of the great cost of applying them. If the capacity of the cars is doubled, then the number of brake appliances is reduced one-half, and thus what at present might be an expense which no companies would feel like incurring would, if reduced to nearly one-half, be quite within the range of economy.

With such cars, and with the "Locomotive of the Future" described last week, it would require some boldness to predict to how great an extent it may be possible to reduce the cost of carrying freight on our great through lines.

The West-Bound Pool.

For a week or two past the newspapers have been full of rumors of a threatened disruption of the west-bound pool, for which the only ascertainable basis is the fact that the claim for a new distribution of percentages, giving a larger proportion to the New York Central, which we have noted heretofore, and which was made formally many months ago, has recently been reported upon by the Commissioner, in accordance with the contract made by the trunk lines, and that he has recommended some change in the proportions, which presumably will give the New York Central a larger percentage than the 33 per cent. which it had by the original apportionment. A report published Thursday in a New York paper states the award to have been 36 per cent. to the New York Centrrl (instead of 33), 25 to the Pennsylvania (unchanged), and 8 per cent. to the Baltimore & Ohio (instead of 8). As we write, it is not certain that the final award will be what the Commissioner recommended in his report. The contract requires that after the Commissioner has examined a claim for a larger share of the traffic and reported his recommendations, any company that objects to the share awarded it may present the reasons for its objections, which the Commissioner then must consider before presenting his final report and award. The latter is made binding without further action. The meeting to hear this final award was to be held as early as possible, but an appointment for Thursday of this week could not be kept by some of the parties, and thus the decision and its announcement may be delayed.

A redistribution of proportions is just what tries the strength of a combination of this kind to the utmost, but when one has been made strictly in accordance with the rules which all the parties have agreed to and by an arbitrator whom they united upon, it can hardly be imagined that it can be made the occasion of breaking up the combination. Doubtless those whose share is reduced are dissatisfied, and if their pride is enlisted in the rank of their road as a carrier of certain kinds of freight, they may be very sore about it, but their expressions of dissatisfaction with the award ought not, in justice to them, be taken as an indication that they are ready to violate their agreement and begin the chronic war of rates which they have happily been able to avoid for the last year and a half.

Among the other things that have been said in the newspapers with regard to this new award, is the assertion that Mr. Fink, the Commissioner, is thought by some of the companies to be too much under the influence of one party to the pool. Considering the very recent action of the trunk lines, their extension of their pool for five years and their unanimous selection of Mr. Fink, not only to conduct its business but to arbitrate all questions like that which has just come before him, this is an astounding assertion, and it is not at all probable that any executive really representing any of the four companies ever gave occasion for such a remark, either in word or thought. That some one may have said it is of course possible, but if the gossip of stations and offices is to be taken as an expression of the opinion of railroad managements, we can have all sorts of startling reports every day. There never was any necessity that the Commissioner of the trunk lines should arbitrate their differences, and the reason he was fixed upon was not simply because he was an expert in the questions likely to come up, but also, and chiefly we believe, because he was universally recognized to be a man of judicial mind, absolutely independent, founding opinions strictly on the facts without any bias of personal feeling or favor, and of the strictest integrity. Nothing has been more remarkable in the recent history of railroad diplomacy than the absolute confidence which Mr. Fink has commanded from every one with whom he has had any dealings, and it is a little disgusting to see it bandied about in widely-read newspapers that some of the companies which he serves have "lost confidence in him." His position in the new award is that of a judge who has rendered a decision, which of course is unfavorable to some party of the suitors. It is doubtless true that the suitors who have lost their case are disappointed in the decision; but we do not believe that any one of them in this case can find it in his heart to say that he has lost confidence in the judge.

The United States Rolling Stock Company.

Last year was much of the time favorable for the operations of a car-loaning company. Most of the year freight traffic was pretty heavy, and after harvest it was unexpectedly large, taxing the resources of many companies to the utmost to provide for it. Yet we find that the United States Rolling Stock earned less in 1878 than in 1877. But, though the company has had for years a considerable surplus of rolling stock for which it has been unable to find customers, yet what we may call its marketable rolling stock has been pretty fully occupied for both of the past two years. Its experience has shown that there is no market for locomotives and passenger cars let out for hire. Part of its stock of this kind is still employed on the Atlantic & Great Western, for which it was built, and which has very little of its own, no money to buy any, and no credit on which to get money; the rest is and almost always has been lying idle. No ordinary growth of traffic causes it to find employment; but such activity in traffic as there was last fall will call out every box car that can run safely. Now, though there has been some increase in the number of such cars owned by the company, it is probable that the number available has been the smallest in the history of the company. Its freight cars are now about six years old. The time has come when they begin to need important repairs, even rebuilding; the Atlantic & Great Western lets cars go when it can, and those of them which are of 6-ft. gauge have to be changed to the standard before they find a new lessee. The company in 1878, therefore, has had its cars in its shops so much of the time as to decrease materially the time that they might and would have been earning rentals or mileage.

Considering, however, the large proportion of the company's stock which is generally idle, and, further, the fact that it was bought just when prices were highest—at least two-thirds more than at present—the company's returns are quite encouraging. We estimate that about $800,000 of its $5,000,000 went for rolling stock, which is not and is not likely to be rented—for stock not suitable to its present business, and never likely to be renewed by it (if it ever gets a chance to wear out). Then the balance, costing $4,200,000, represents a present value of about $2,500,000. Now the $220,000 which the company finds it safe to divide from the profits of 1878 is a very fair return on $2,500,000—nearly 9 per cent. The dividends on the actual capital were only 4.4 per cent., it is true; but that is no indication of the returns that may be had legitimately by investments made now by this company, which has at last learned pretty thoroughly what the demand in this country is for, and how to supply it. The President already is discussing the propriety of raising more capital to increase the stock, and another season like last fall would probably determine the company to do so. Its box cars appear to have earned last year on an average about $124 each, a very large part of which was from mileage at $\frac{3}{4}$ cent per mile. And it is significant that this company is satisfied to get this rate on cars which are kept reasonably busy. It lets its cars freely on these terms (to fast freight lines and the like), and apparently stands ready to build more cars to let on these terms.

It seems, then, that there is room for an organization which keeps cars of certain types to let, the types being, first, box cars, which are the ones most commonly used, and, second, cars for special purposes, like refrigerator cars, for which there may be little demand on any one road, but which may be needed constantly for shipments over routes consisting of many roads. Brewers, we believe, are customers for refrigerator cars. When they take them to ship their beer (large quantities go now from St. Louis to Texas), they supply the ice, pay the ordinary freight, and are allowed the customary mileage for the use of the car. Other special forms of cars are made which the rolling stock company can supply better than a railroad company, because there is not employment enough even for a single one on any one railroad, and the rolling stock company has for its field of operations the whole system of railroads of the United States and Canada. But the great bulk of loanable stock is, and probably will remain, not the rarest but the commonest form of freight car—the box car, which alone is used for the transportation of grain, provisions, cotton and merchandise—all the great staples of American traffic except coal, petroleum and live stock. This company is now prepared to manufacture for itself whatever cars it may need, as well as to do its own repairs, and it is, moreover, prepared by its experience to make only such as are actually in demand, and of the quality best calculated to bear the usage which a loaned stock receives—generally used for through traffic and very seldom for local, and never "at home," having, indeed, no home to go to so long as it is in use. This experience gives it a great advantage for conducting a car-loaning business in this country—an experience which could only be purchased by years of costly experiments, which, in its case, have been made much more costly by the peculiar circumstances and purposes of its organization, it having been intended to give a permanent supply of a very large part of the rolling stock indispensable to the Atlantic & Great Western, and then being forced to its present position, in which it offers to supply the temporary and occasional wants of the whole railroad system, by the failure to carry out the original contract.

Improvements on Prussian State Railroads.

The Prussian government railroad management has recently, it is said, made extraordinary efforts to reduce the expenses of the state railroads. An account in a German paper enumerates the principal reforms as follows: First, the construction of tunnels on new roads for a single track only; while hitherto, when a road was built, though with a single track and a very remote prospect of needing another, the tunnels on it were always excavated wide enough for two tracks. Second is mentioned the use of steel rails exclusively and the adoption of an iron superstructure (the Hilf system) instead of wooden cross-ties. Not much credit is claimed for the adoption of steel, the price being about the same as that of iron, but the iron superstructure is hailed as a forward step, and also likely to be a good thing for the German iron works, which, like those of the rest of the world, have been having a very hard time. We do not see, however, any other indications abroad that iron substitutes for steel are believed to have been proved economical. The third improvement is the abandonment of optical signals for sections of the road between stations. This simply makes the Prussian practice like that of the greater part of the rest of the railroad world, in Europe as well as America. The change is said to have been without any injurious effects, while there has been a considerable saving in the army of road guards who have been accustomed to stand along the roads and salute the trains as they pass—a saving which has been reinforced by

substituting women for men to attend the crossing gates found at short intervals along every road. Fourth is mentioned the introduction of central interlocking switch and signal apparatus, of the Saxby & Farmer or similar patterns. Not only, it is said, has this resulted in greater safety, but also, by substituting a mechanical apparatus worked by one man to set a large number of switches and signals, the number of switchmen has been considerably reduced, even at small stations. As wages are very low in Germany, this is quite noticeable. It would appear that any labor-saving mechanism ought to save a great deal more money here than there. The practice there, however, of having a great many men to do what here is done by very few will modify this conclusion somewhat. A fifth improvement is the introduction of continuous brakes. These have been put since 1878 on nearly all the passenger trains of the government roads, pretty much all kinds being used—the Westinghouse, Smith (vacuum), Heberlein and Steele. Experiments have been made with the Heberlein brake on freight trains, and it is said with prospects of success in economizing the number of brakemen as well as increasing safety—which indicates that they have more brakemen on freight trains there than here. We could not spare many from our freight trains, if they had no braking to do.

The sixth improvement is the reduction of the cost of switching service by arranging sorting tracks on inclined planes, where the movement is generally made by gravity alone, without the use of an engine. This has been the practice at a few great yards in Germany for a number of years, with very excellent results, it is said. Horses have been used instead of engines in switching cars, also with economy.

Seventh, and finally, the article we speak of mentions the introduction of what we may call "second-class operation," that is, regulations for working roads with light traffic without all the precautions and appliances which are made necessary only by frequent, heavy and fast trains. It might be supposed that such a practice would need no introduction. But things go very much by rule in Europe, and if there were a road with a maximum speed of seven miles an hour, two or three cars to the train and two or three trains a day, it did not follow that it might dispense with crossing gates, road guards, elaborate signals and the like. It was likely to be required to do just about what other roads had to do. The modification of the regulations simply indicates that the fact is at last recognized that a train that goes at a walking or dog-trot pace is not likely to run over any one or into another train, and that it is not necessary to take precautions against collisions where there is never more than one train on the road.

The adoption of these improvements under the pressure of the necessity of reducing expenses, to meet, to some extent, reduced receipts, leads the writer in question to assert that the management of the Prussian state roads has taken the lead in regard to economy and progress in the working of railroads.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads this year as follows:

Cincinnati Southern.—Extended southward 11 miles, to a point 13 miles from Somerset, Ky.

Valley, of Ohio.—Track laid from Akron, O. northward, 7 miles.

This is a total of 18 miles of new railroad, making 70 miles reported thus far this year.

THE WESTERN UNION RAILROAD, greatly to the surprise of almost everybody, failed to pay the coupon on its bonds that fell due Feb. 1. The company has been commonly identified with the Chicago, Milwaukee & St. Paul, but there has never been any other connection between them than that caused by the latter company's owning a majority of the Western Union stock, and so putting its own officers in control of the Western Union road, and working it in its interest so far as possible, which is not a great way. The Western Union report is always bound up with that of the Chicago, Milwaukee & St. Paul, but made entirely distinct. We must say, however, that the report has never given any intimation of the danger to which, it now appears, the company has always been exposed—that is, the existence of a considerable floating debt which has been carried along for years by the bank of its President, the Hon. Alexander Mitchell, of Milwaukee. The yearly interest charge is $245,000, and the reports have shown average net earnings for the past five years to the amount of $311,000 per year. The balance sheet at the close of 1877 reported among the liabilities, besides a "floating debt" of $56,400, $108,680 due the Chicago, Milwaukee & St. Paul Company, and a charge of $355,600 to "income account." The chief owner of the bonds is the bankrupt City of Glasgow Bank, which also owns most of the stock not in the possession of the Chicago, Milwaukee & St. Paul Company. Mr. Julius Wadsworth, Vice-President of the latter company, says that after the failure of the Glasgow Bank Mr. Mitchell no longer felt justified in advancing money to pay the coupons without security, which the Chicago, Milwaukee & St. Paul was not willing to give unless joined by the other chief stockholder.

The Western Union probably never can be made a profitable road, but in the year of its largest net earnings it made a profit of about $1,620 per mile, and it has averaged nearly $1,300 per mile for five years past. It seems then that it is able to meet the interest on its current funded debt, and that if the floating debt can be retired the way may be smooth before it. What this floating debt may be is not yet announced. If there is a foreclosure, probably most of it will be destroyed; but in other hands the road very likely would not be so profitable as it is now. It does not bring much traffic to the Chicago, Milwaukee & St. Paul; at least, most of the traffic that it brings is carried but a short distance on the latter road, but it can do it some harm, and the Chicago, Milwaukee & St. Paul can do it a great deal of harm. The default is unfortunate for the Glasgow Bank stockholders, for it will inevitably lessen the amount that can be realized from the bonds which it holds, and which it needs to dispose of at an early day. They seemed a month ago a perfectly good security; now, though all that stands between them and regular payments hereafter may not amount to more than three or four coupons, their reputation has been so injured that they will not for a long time bring their old price. The stock never was worth anything worth mentioning—at least that part owned by the Glasgow Bank was not. The Chicago, Milwaukee & St. Paul's holding has doubtless been worth something to it, as enabling it to control the Western Union road. But the prospect of earning a dividend has always been very slim.

THE UNION PACIFIC RAILROAD has issued a statement this week called out chiefly by a widely-spread report that the dividends declared recently had not been paid on some very large blocks of stock held by directors, etc., which rumors were affecting the market price of the stock. The Treasurer asserts that all of the dividends that have been declared from the first of 1½ per cent. July 1, 1875, to the last of 1½ per cent. Jan. 1, 1879, have been paid to the stockholders, with the exception of $6,573.50 not yet called for. He also says that the sum withheld by the government above the half of the transportation dues which the law authorizes it to withhold amounts to about $3,000,000, and is more than sufficient to meet what will become payable in consequence of the recent decision of the Supreme Court. We stated the amount withheld as given by the government Auditor of Railroad Accounts to have been $1,747,691.50 on the 1st of July last. But the Auditor stated that there were at that time also $1,511,493.11 of "claims for services performed not yet paid," and if these were allowable claims they account for the difference and fully provide for the sum due the government by the Supreme Court decision. The Union Pacific also submits an income account for the year ending June 30, 1878, showing net earnings amounting to $6,946,603, besides $115,903 of interest on investments, or a total net income of $7,062,506, out of which the following charges come prior to dividends:

Interest on bonds	$3,333,967	
One-half government transportation	616,067	
5 per cent. of net earnings due government	347,330	
		$4,297,364
Surplus (= 7.52 per cent. on stock)		$2,765,142

The amount divided that year was 6 per cent. The funded debt was reduced $380,000 meanwhile.

A statement of the land department for the calendar year 1878 is also given, showing sales for the year of 318,903 acres for $1,557,082, while the interest received on contracts was $592,750, which is more than the interest on the land-grant bonds that accrued meanwhile. The reduction in land-grant bonds during the year (all the proceeds of the land grant are devoted to this purpose) was $440,000. The land sales of 1878 were enormously greater than those of 1877, the figures being:

	1878.	1877.
Acres	318,903	99,016
Amount	$1,557,082	$342,709

The large sales augur well for the growth of local traffic, the more so because there is an immense area of government land along the line which is given away to settlers, and a sale by the company argues the occupation of a much greater quantity of other land near the road which will yield it traffic.

THE PURCHASE OF THE GERMAN RAILROADS BY THE EMPIRE seems to be generally considered as certain to be realized finally; but the plan makes very slow progress, and last year the progress seems to have been backward rather than forward. The first step seems to be the purchase one by one of the leading Prussian railroads by the Prussian government, to be by it, when the time comes, turned over to the Imperial government; but though negotiations are in progress for the purchase of two or three lines by Prussia, we believe that no one of them has yet been turned over to that government, and at the present rate it will take nearly a generation to carry out the scheme completely. Meanwhile the smaller states like Saxony and Bavaria have made much greater haste and have absorbed all or nearly all their company railroads, but their object has been not to forward but to hinder the accomplishment of the Imperial railroad project. Very many favor the mixed system of private and state railroads working together in one country and to a considerable extent in competition with each other; but the governments which favor this system sometimes prefer to destroy it by absorbing the private roads and thus making an exclusively state system to the prospect of the control of their railroads by the Imperial government, which is paramount over all the states. Meanwhile the financial condition of the German railroads has been growing worse, and the government's finances also, which is sufficient reason for delay in a project which involves immense annual expenditures. The state railroads especially have suffered from decreased net earnings. It is to be said, however, that since the close of 1878 there has been increased activity in the negotiations for the absorption of private railroads by Prussia. It does not purpose to buy, but usually to lease at fixed rentals, and the stockholders quite generally favor the transfers, as it gives them what is equivalent to a government bond in place of their stocks—a fixed certain income instead of a fluctuating and uncertain one.

THE WELLAND CANAL IMPROVEMENT seems at last to have made an impression on the New York Canal authorities. The State Engineer and Surveyor, Mr. Horatio Seymour, Jr., in his recent report on the canals, says that "in three or four years from this date, British steamships of nearly 2,000 tons will lie at the docks at Chicago and other lake ports unloading their merchandise or receiving their cargoes of grain, provisions, etc." If this is true, Mr. Seymour's proposition to meet it by deepening the Erie Canal one foot, so that canal-boat capacity may be increased from 200 to 250 tons, and to improve the lakes so that steamers carrying 3,500 tons may sail on them, seems wofully inadequate. Any improvement of the lakes will help the St. Lawrence route as much as the Erie Canal. The big lake steamers would simply transfer their cargoes into the 2,000-ton vessels at Port Colborne, and the latter would drive the 250-ton canal-boats out of the field for all export grain. Indeed, if what Mr. Seymour says be true as to British vessels of 2,000 tons going through to Chicago after the completion of the Welland Canal, then salt cannot save the Erie Canal *for export freight*. It may be deepened and widened ever so much, but it will never let 2,000-ton vessels through, and, if it did, it would cost them much more to get through than to sail down the deep and broad Ontario and St. Lawrence, just as it costs more now to move canal boats a hundred miles on the Erie Canal than a hundred miles on the Hudson. But it does not seem probable that British (or other) ships of 2,000 tons will make many voyages between Chicago and and Liverpool, even after the Welland Canal is completed Experience indicates that it will be more profitable to transfer from the lake vessel to the ocean vessel at Montreal or elsewhere on the St. Lawrence than to run the ocean vessel through, though the way may be open for it. And when that day comes, if New York keep its export grain trade, it will probably be because vessels will carry cheaper from New York than from Montreal to Liverpool, and not because it can get grain from Chicago as cheaply as Montreal can.

THE CAPITAL RAISED IN 1878, for government loans, banking institutions, railroads and other industrial enterprises, was, according to the Belgian *Moniteur des Intérêts Matériels*, $912,258,355, of which $724,382,400 was in government loans and only $155,880,000 for railroads. The totals for the past five years are given by the *Moniteur* as follows:

1874	$799,000,000	1877	$1,571,000,000
1875	330,000,000	1878	912,000,000
1876	722,000,000		

The *Moniteur* ntends to include all loans brought out in Europe, but it certainly does not take account of some placed in America. It credits America with $6,735,000 raised for railroads, etc. (which would be about $3,300 per mile of road built in the United States alone), and $1,000,000 for government and municipal loans, or $7,735,000 in all, against $704,600,000 in 1877, $313,200,000 in 1876, $44,400,000 in 1875, and $198,400,000 in 1874. These may represent pretty accurately the American investments placed in Europe in these years, but they give no idea of those issued in this country, which, indeed, it would hardly be possible to get a full list of. Of the railroad investments, amounting to about $156,000,000, no less than $114,000,000, or 73 per cent., is credited to France and its colonies, $24,570,000 to England and its colonies, $2,875,000 to Holland and its colonies, $2,600,000 to Italy, and not as much as $2,000,000 to any other country. This country doubtless has been and remains the great consumer of investments *for productive purposes*. Elsewhere, if there are any considerable loans, it is usually chiefly to governments, and a very small part is for enterprises expected to produce any material return. The loan issued by Russia alone in 1878 was more than twice as great as the aggregate European investments of capital in railroads, etc., that year, and this loan was, we may say, expended for destruction instead of production.

NEW PUBLICATIONS.

No. 41 of Van Nostrand's Science Series is *The Strength of Materials*, by William Kent, M. E., which is a reprint from *Van Nostrand's Magazine* on a subject certainly of the first importance, and on which there is, we believe, no other *little* book. The author says in his preface: "It is in the hope of more widely diffusing correct information and generally popularizing the subject of strength of materials that the articles have been written. Theoretical discussions have been avoided, and it has been endeavored to make them at once elementary and practical."

Contributions.

The Credit for Good Runs.

KANSAS CITY, MO., Jan. 27, 1879.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I notice the communication from "J. L. D." from Poughkeepsie, N. Y., in your paper of Jan. 24. Now, whether said "J. L. D." is a railroad man or not I do not know; but I do know one thing, and that is this: This practice of puffing up conductors as the only man on the train is disgusting in the extreme, at least in the minds of practical railroad men. In the article of Nov. 29, referred to, no one reading it would be led to believe there was any other railroad man or employé of the company on the train, and, from the reading of it, the same might be said in relation to Conductor Clason's record. He must have been the only employé on the train at the time referred to. This *twaddle* all comes from the editor of the La Crosse *Republican* of Nov. 22, and any trainman who has been on a road a month or two would be considered rather thick-headed who could not see why these

editors of papers take so much interest in the *popular conductor*. Bosh!

Now, in relation to the mileage as given by the La Crosse *Republican*. He claims the distance from Sparta to North La Crosse depot to be 28 miles: it is 27 miles. Further, he claims the distance from Greenfield to La Crosse to be 50 miles: it is 37 miles—12 miles further from La Crosse than Sparta is, which rather knocks Conductor Clason's or Green's 50-miles-per-hour time into the *waste-basket*, where all such puffs belong. These figures are taken for mileage from an *old time card*, and I never knew the La Crosse Division of the Chicago, Milwaukee & St. Paul Division to be lengthened—at least from Greenfield to *North La Crosse*. Further, I have been there myself, know just how far it is, and *about* how fast a train can get over the iron from Greenfield to La Crosse, or rather North La Crosse. It is much as "J. L. D." says. If many of the conductors on our roads had a little more generosity in their make-up, they would be willing to say *we* instead of *I* did so and so. Now that the engineer on most roads has the *stopping power* as well as the *starting power* is his hands, it would seem to almost any one (except the editor of *the* La Crosse *Republican*) that the engineer should at least be mentioned, as his friends far away would be pleased to know if he was *still an employé on that train*. But then the engineers are not expected to appear in print as is the *popular conductor*. The editor of the La Crosse *Republican* don't have to know who is engineer when he wishes to ride over the road. It has long been the *popular conductor* when all things went well, but a drunken, reckless engineer when things went wrong. KINGSLAND.

La Crosse *Republican*, please copy.

Distribution of Weight on Drivers of Mogul Engines.

JAN. 28, 1879.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I notice in the issue of the 24th inst. a communication signed "J. L. D." relating to distribution of weight on a Mogul engine in his charge, also what you say in relation to the same.

There is evidently something wrong somewhere, as we have Mogul engines running that wear their brasses as evenly as any other class of engines. The weight of ours is distributed by connecting all the driving-wheels on each side together, with equalizing levers, the truck not being connected with the forward drivers by means of equalizers, but left to carry its proportion of the weight.

I would like to know whether or not "J. L. D." has the back and middle pairs of drivers connected together with equalizing levers, and then the forward pair connected to middle pair, or the back and middle pair connected together, and the forward pair connected with the truck; if the latter, about where the fulcrum is, for if it were too far forward the weight would be thrown on the truck, as has evidently been the case with his Mogul, and if too far back the weight would be on the driving-wheels, when, if the fulcrum were at the proper place, the weight would be equally divided between the truck and drivers. There are several conditions that might produce the trouble he speaks of, and I for one would be glad to hear a further explanation from him.

INQUIRER.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

Delaware, Lackawanna & Western, annual meeting, at the office in New York, Feb. 25, at 10 a. m.

Housatonic, annual meeting, at the office in Bridgeport, Conn., Feb. 28.

Union Pacific, annual meeting, at the office in Boston, March 5, at 11 a. m.

Boston & Albany, annual meeting, at the passenger station in Boston, Feb. 12, at 11 a. m.

Dividends.

Dividends have been declared as follows:

New York, Providence & Boston, 2 per cent., quarterly, payable Feb. 10. The company drops from 2½ to 2 per cent.

Middlesex Central (leased to Boston & Lowell), 3 per cent., semi-annual, payable Feb. 1.

Mail Service Extensions.

New mail service over railroad lines has been established as follows:

East Line & Red River, service extended from Leesburg, Tex., to Winnsboro, 12.55 miles.

Cazenovia, Canastota & De Ruyter, service extended from Cazenovia, N. Y., to De Ruyter, 14.60 miles.

Olean, Bradford & Warren, service ordered from Bradford, Pa., to Olean, N. Y., 22.88 miles.

Kendall & Eldred, service ordered from Allegheny Bridge, N. Y., to Bradford, Pa., 21.94 miles.

Manchester & Keene, service ordered from Greenfield, N. H., to Keene, 29.91 miles.

Chicago, Milwaukee & St Paul, Iowa & Dakota Division, service extended from Algona, Ia., to Sheldon, 79 miles; *Hastings & Dakota Division*, service extended from Glencoe, Minn., to Montevideo, 83 miles.

Worthington & Sioux Falls, service extended from Luverne, Minn., to Sioux Falls, Dak., 28 miles.

Utica, Ithaca & Elmira, service extended from Cortland Village, N. Y., to De Ruyter, 20 miles.

Pensacola & Perdido, service recently discontinued is re-established, from Pensacola, Fla., to Millview, 8 miles.

Foreclosure Sales.

The *Warwick Railroad* was sold in Providence, R. I., Feb. 5, under foreclosure of mortgage and bought for $31,000 by A. J. Dull, a large holder of the bonds. The road was built in 1875 and is nine miles long, from Auburn, R. I., to Warwick Beach. It was expected to have a large pleasure travel in summer and extensive coal docks were also projected at its terminus, but the earnings have been very light and the road has not been worked regularly. By the latest statement the company had $200,000 funded debt and $164,307 floating debt, besides $39,200 stock.

The *Missouri River, Fort Scott & Gulf* road was sold at Topeka, Kan., Feb. 5, under foreclosure of mortgage and bought for the bondholders by Wallace Pratt for $1,930,000. The road is 160 miles long, from Kansas City, Mo., to Baxter Springs, Kan., and is one of what are known as the Joy roads. A reorganization has been arranged.

The *Kansas City & Santa Fe* road, a branch used to connect the above road with the Leavenworth, Lawrence & Galveston, was sold at the same time and bought for the bondholders by George H. Nettleton for $120,000.

The *New Jersey Southern* road, it is announced, will be sold Feb. 28, under a decree of the Court of Chancery of New Jersey. The sale will include the main line from Sandy Hook, N. J., to Atsion, 70.5 miles; the Southern Division, from Whiting Junction to Bay Side, 47.5 miles; the Toms River Branch, 20.5 miles; the Atco Branch, 9 miles, and the Port Monmouth Branch, 9.5 miles, 157 miles of road in all, with all the equipment, etc., and a steamboat in use between Sandy Hook and New York. The main line from Sandy Hook to Long Branch is claimed by the Long Branch & Sea Shore Company. By the latest statement there were outstanding $2,000,000 first-mortgage; $120,000 Toms River Branch; $1,000,000 second-mortgage, and $1,700,000 consolidated bonds, $4,820,000 in all. This is the fourth time that the sale of the road has been announced in two years.

The *St. Louis & Southeastern, Tennessee Division*, will be sold in Nashville, Tenn., April 9, by Special Commissioner W. B. Reese, under a decree of foreclosure. The road, originally the Edgefield & Kentucky, includes 38 miles of track, from Edgefield Junction to the Kentucky line, and a half-interest in 9 miles, from Edgefield Junction to Nashville, used jointly with the Louisville & Nashville.

A General Passenger Agents' Meeting.

The Buffalo *Commercial* of Jan. 30 says: "A special meeting of General Passenger Agents adjourned last evening, after having been in session two days. Those who took part in the proceedings were Mr. C. B. Meeker, of the New York Central; Mr. B. McChan, of the Hoosac Tunnel; Mr. F. E. Snow, of the Canada Southern; Mr. Henry C. Wentworth, of the Michigan Central; Mr. Wm. Edgar, of the Great Western; Mr. J. W. Cary, of the Lake Shore, and Mr. T. D. Sheridan, of the Grand Trunk. * *

"From a source which we deemed reliable it was learned that the meeting was for the special purpose of adopting some plan to circumvent the scalpers, or outside ticket agents, who, it is claimed, are particularly numerous and obnoxious in this city. Last August the agents decided to withhold tickets from the scalpers, but the latter resorted to various tricks to compete with the main offices, and have succeeded so admirably that action became necessary, hence the call for the meeting. Before adjourning last evening it was decided not to put out any tickets in this city, and to fix the rates among themselves so as to prevent competition, and to exterminate the scalping business. In regard to distributing tickets east and west among scalpers, no action was taken. It is probable, however, that tickets will be placed at other points in a short time, possibly early next month. The agents adjourned to meet in Rochester between the 15th and 18th of February."

ELECTIONS AND APPOINTMENTS.

Anderson, Lebanon & St. Louis.—The United States Circuit Court has appointed James A. Larned Receiver, in place of L. A. Millbank, relieved.

Bachman Valley.—At the annual meeting in Hanover, Pa., recently, Capt. A. W. Eichelberger was elected President, with the following directors: J. J. Nourse, P. Y. Pine, C. A. Simms, O. L. Johnson, J. Dellone, J. Althoff, J. W. Gitt, H. C. Schriver, Stephen Kiefer, Levi Dubbs, A. S. Werner, H. Shue. The board elected C. W. Forney, Treasurer.

Bald Eagle Valley.—At the annual meeting, recently, the following were chosen: President, L. A. Mackey; Directors, Andrew C. Curtin, James Gamble, John Irvin, C. A. Mayer, A. C. Noyes, Thomas A. Scott; Secretary and Treasurer, Edmund Blanchard. The road is leased to the Pennsylvania.

Baltimore & Ohio.—Mr. Milton H. Smith has been appointed General Freight Agent, in place of M. L. Doherty, resigned. Mr. Smith was long General Freight Agent of the Louisville & Nashville, and came to the Baltimore & Ohio a few months ago as Assistant to the President.

Mr. Thomas Fitzgerald has been appointed Supervisor of the Valley Branch, in place of J. H. Averill, resigned. Mr. Fitzgerald has been 12 years on the road, and for some time past has been Chief Train Dispatcher at Camden Station, Baltimore.

Chicago, Rock Island & Pacific.—Mr. L. H. Whitson has been appointed General Agent of the Land Department, with office at Davenport, Ia. He was formerly connected with the Atchison, Topeka & Santa Fe.

Cleveland, Columbus, Cincinnati & Indianapolis.—Mr. D. B. Martin is appointed General Southern Agent, with office in Cincinnati

Columbus & Xenia.—At the annual meeting in Columbus, O., Jan. 30, the following directors were chosen: J. R. Swan, Robert Neil, H. C. Noble, P. W. Huntington, R. A. Harrison, J. W. Andrews, G. M. Parsons, Wm. Dennison, Alfred Thomas, C. P. Cassily, Henry Hanna, Thomas D. Messler. The board elected J. R. Swan, President; R. S. Smith, Secretary and Treasurer. The road is leased to the Pittsburgh, Cincinnati & St. Louis.

Cumberland & Maurice River.—The officers of this company, successor to the Bridgeton & Port Norris, are: President, I. Hicks Conrad; Secretary and Treasurer, C. W. Littell; Superintendent, L. H. Dowdney. The offices of the President, Secretary and Treasurer are at No. 314½ Walnut street, Philadelphia; of the Superintendent at Port Norris, N. J.

Dallas & Wichita.—The board recently elected Silas Reed President; W. R. McIntyre, Vice-President; George Shields, Secretary; M. Painter, Treasurer.

Dannemora.—Mr. Edward Croker is appointed Master Mechanic, with office at Plattsburg, N. Y. He has been for some time a locomotive engineer on the Albany & Susquehanna road.

Delaware Division Canal.—At the annual meeting in Philadelphia, Feb. 4, the following managers were chosen: T. W. Woolston, J. B. Moorhead, Thomas McKean, E. W. Clark, E. Roberts, A. E. Borie, H. Pratt McKean, S. Fisher Corlies.

East Berlin Branch.—At the annual meeting in Hanover, Pa., recently, the following were chosen: President, A. W. Eichelberger; Directors, Jacob Resser, G. W. Diehl, Wm. S. Hildebrandt, Samuel Meissenhalter, A. W. Storm, Wm. Bittenger, J. Wolf, S. Kiefer, R. M. Wirt; Treasurer, Jacob Resser; Secretary, A. W. Storm.

Eastern.—Mr. George L. Wildes has been appointed Acting General Ticket Agent, in place of B. F. Patrick. Office in Boston.

Galveston, Houston & Henderson.—At the annual meeting in Galveston, Tex., Jan. 29, the following directors were chosen: John Sealy, J. H. Hutchings N. B. Yard, A. P. Lufkin, Galveston, Tex.; James A. Baker, Houston, Tex.; H. M. Hoxie, R. S. Hayes, D. S. H. Smith, Palestine, Tex.; H. B. Andrews, San Antonio, Tex.; Jacob Seligman, New York; T. W. Peirce, Boston. The board elected John Sealy President; H. M. Hoxie, Vice-President and General Manager; Secretary, F. P. Killeen; Treasurer, J. H. Hutchings; Executive Committee, John Sealy, R. S. Hayes, H. M. Hoxie.

Grand Haven.—Mr. James E. Vane has been appointed Roadmaster, in place of A. D. Nelson, who has resigned to accept a position on another road.

Huntingdon & Broad Top.—At the annual meeting in Philadelphia, Feb. 4, B. Andrews Knight was reëlected President, and the following directors chosen: Rathmel Wilson, John Devereux, I. V. Williamson, James Long, James Whitaker, Joseph H. Trotter, D. J. Morrell, Wm. P. Jenks, C. W. Wharton, Thomas R. Patton, James Day Rowland, Jacob Naylor.

Joplin.—Mr. W. P. Newton has been appointed Auditor, in place of J. A. Hardin, resigned. Office at Girard, Kansas.

Junction City & Fort Kearney.—The following officers have been chosen: D. M. Edgerton, President; J. H. Dowland, Secretary; F. T. Iglehart, Treasurer.

Lake Erie & Louisville.—Mr. A. E. Rudiger is appointed Roadmaster, in place of George R. Campbell, resigned.

Little Miami.—At the annual meeting in Cincinnati, Jan. 28, the following directors were chosen: A. D. Bullock, C. P. Cassily, W. H. Clement, Julius Dexter, Henry Hanna, L. B. Harrison, Hugh J. Jewett, Joseph Longworth, Thomas D. Messler, Joseph H. Rogers, J. R. Swan, Coates Kinney. The board elected Hugh J. Jewett, President; Henry Hanna, Vice-President; Julius Dexter, Secretary; S. E. Wright, Treasurer. The road is leased to the Pittsburgh, Cincinnati & St. Louis.

Logansport, Crawfordsville & Southwestern.—Superintendent W. J. Simson having resigned, the duties of the office will be assumed by J. F. Claybrook, Receiver. The offices of the Master of Transportation and Train Dispatcher are removed from Logansport to Terre Haute, Ind.

At the recent annual meeting the following directors were chosen: S. D. Schuyler, Fred W. Jones, Joseph Collett, Joseph Milligan, Wm. R. Carter, John G. Clark, James H. Paris, R. B. F. Pierce, John S. Brown, A. H. Blair, W. M. Pardy, T. N. Rice, H. M. Perry. The officers chosen by the board are: Joseph Milligan, President; Wm. R. Carter, Vice-President; J. H. Paris, Secretary; John G. Clark, Treasurer; R. B. F. Pierce, Attorney.

Louisville, New Albany & Chicago.—Mr. S. M. Brown, Superintendent of Telegraph, has been appointed Car Accountant also, with office at Lafayette, Ind. Balances should be remitted to and drafts drawn on W. H. Lewis, Treasurer, New Albany, Ind.

Natchez, Jackson & Columbus.—At the recent annual meeting in Natchez, Miss., the old board was reëlected, and afterward chose W. T. Martin President; James H. Fitzpatrick, Secretary and Superintendent; G. W. Koontz, Treasurer.

Newark, Somerset & Straitsville.—Mr. David Lee has been chosen President, and I. H. Sceter, Treasurer. The road is leased to the Baltimore & Ohio.

New York Elevated.—Mr. Robert Stewart has been appointed General Superintendent. He was formerly on the Pennsylvania road, but has for some time been Superintendent of Telegraph on the Baltimore & Ohio.

New York & Oswego Midland.—Mr. F. W. Getty is appointed Assistant General Freight and Passenger Agent, with office at No. 145 Broadway, New York.

Northern (New Hampshire).—Master Car Builder Albert Langmaid having resigned, to take effect Jan. 31, from that date Mr. James N. Lauder assumes general charge and supervision of all departments of the repair shops of the Northern and Concord & Claremont roads, with the title of Superintendent of Rolling Stock and Machinery. All supplies for the shops will be purchased by him.

Mr. Lauder has been Master Mechanic of the road for a long time. He is an active and prominent member of the Master Mechanics' Association, and now its Second Vice-President.

North Pennsylvania.—Mr. Wm. M. Geary is appointed Master of Transportation, in place of Albert H. Fracker, promoted to be General Superintendent. Mr. Samuel Jackson is appointed Roadmaster, in place of J. H. Ainsworth, resigned, and Charles Norton, Master Mechanic, in place of Frank Roop, resigned. Offices at Berks Street Depot, Philadelphia.

Pittsburgh, West Virginia & Southern.—At the annual meeting in Pittsburgh, Jan. 30, the following directors were chosen: A. C. Hays, Josiah Reamer, Pittsburgh; Henry Warner, Allegheny, Pa.; Rev. Dr. George P. Hays, Washington, Pa.; A. Fairchild, J. M. Hagan, George C. Sturgess, J. R. Thompson, W. T. Willey, Monongalia County, W. Va.; G. W. Brown, John Doonan, J. M. Mason, A. H. Thayer, Taylor County, W. Va. The board elected W. T. Willey, President; John Doonan, Vice-President.

Providence & Worcester.—At the annual meeting in Providence, Feb. 3, the following directors were chosen: Wm. S. Slater, George A. Leete, Moses B. I. Goddard, Amos D. Lockwood, Frederick Grinnell, Providence, R. I.; Gideon L. Spencer, Pawtucket, R. I.; Lyman A. Cook, Oscar J. Rathbun, Woonsocket, R. I.; Paul Whitin, John C. Whitin, Whitinsville, Mass.; Estus Lamb, Blackstone, Mass.; Elijah B. Stoddard, Joseph E. Davis, John Dean, Worcester, Mass.; Eben B. Phillips, Boston. The new directors are Oscar J. Rathbun and John Dean, who succeed Henry Chapin, deceased, and John R. Balch, who declined a reëlection.

Richmond, Fredericksburg & Potomac.—At the adjourned annual meeting in Richmond, Jan. 22, Judge Robert Ould was reëlected President, with the following directors: Isaac H. Carrington, Richmond, Va.; J. S. Blackburn, Alexandria, Va.; Charles Chauncey, Moncure Robinson, Jr., Philadelphia. State director, Dr. L. B. Anderson.

St. Louis, Kansas & Arizona.—The directors of this new company have organized by electing Oliver Garrison, President; D. R. Garrison, Vice-President; D. K. Ferguson, Secretary and Treasurer.

St. Johns.—Mr. Henry Gaillard has been appointed General Freight and Ticket Agent, with office at St. Augustine, Fla.

St. Louis & San Francisco.—Mr. James D. Fish has been chosen President, in place of Cornelius J. Bergen, resigned, and Mr. Calvin Littlefield, Secretary and Treasurer in place of W. F. Buckley, resigned. The offices of both will be in New York.

Other appointments are announced as follows: S. F. Randolph to be Paymaster, in place of G. F. Randolph; C. E. Jennings, Northeastern Passenger Agent, with office in Cleveland, O.; W. H. Coffin, Jr., Southeastern Passenger Agent, with office in Pittsburgh, Pa. The office of Eastern Passenger Agent, at Cincinnati, has been abolished.

Seattle & Walla Walla.—At the annual meeting in Seattle, Wash. Ter., the old board was reëlected, as follows: L. B. Andrews, Wm. N. Bell, John Collins, J. M. Colman, A. A. Denny, Bailey Gatzert, John Leary, A. Mackintosh, James McNaught, F. Matthias, Wm. Renton, C. B. Shattuck, H. L. Yesler.

Somerset & Cambria.—The directors of this company, successor to the Somerset & Mineral Point, are: Wm. J. Baer, Somerset, Pa.; Isaac Kaufmann, Davidsville, Pa.; W. M. Hall, Bedford, Pa.; Daniel J. Morrell, Johnstown, Pa.; Charles Donnelly, Pittsburgh.

South Carolina.—Mr. John B. Peck has been appointed General Superintendent, in place of S. S. Solomons, resigned.

Southern Central.—Mr. W. H. Bravo has been appointed Track Supervisor of this road.

Springfield, Jackson & Pomeroy.—Mr. Wm. N. Whitely has been appointed Receiver. He was until recently President of the company.

Union Pacific.—Mr. W. B. Doddridge, late agent at Ogden, is appointed Acting Superintendent Western Division, with office at Evanston, Wy. Ter., in place of Mr. A. A. Egbert, who has been made Superintendent of the Colorado Central.

United States Rolling Stock Co.—At the annual meeting in New York, Feb. 3, the old trustees were reëlected, as follows: Jonathan Edwards, E. G. Fabbri, Wm. H. Guion, James B. Hodgskin, Adrian Iselin.

Utah & Pleasant Valley.—The officers are: C. W. Schofield, President; George Goss, Vice-President and Treasurer; A. F. Doremus, Secretary; J. Fewson, Chief Engineer. Offices at Salt Lake, Utah.

PERSONAL.

—Col. John Robertson, a director of the Mississippi & Tennessee, and formerly, for several years President of the Memphis & Little Rock, died at Horn Lake, Miss., Jan. 24, of paralysis, aged 54 years.

—Mr. Charles Cammell, Chairman of the great iron and steel manufacturing company, known as Charles Cammell & Co., of Sheffield, England, died in London, Jan. 12. Mr. Cammell commenced life as an iron-monger's apprentice at Hull. He subsequently went to Sheffield, and after holding the position of a commercial traveler and being a partner in a small file and steel business, he began the erection of the Cyclops Works and lived to see them rank among the largest works of the kind in the kingdom. In 1864 they were converted into a limited company, with a capital of £1,000,000 terling.

—Mr. Ezra J. Perkins, a well-known railroad contractor of Boston, died last week in Kittrell, N. C., where he had gone for his health. In early life he was a section hand and afterward Roadmaster on the Boston & Providence. He built many roads in New England, including a large part of the Boston, Hartford & Erie, and was a partner with N. C. Munson on the Back Bay filling contract in Boston. He leaves a considerable fortune.

—Mr. M. L. Doherty has resigned his position as General Freight Agent of the Baltimore & Ohio. He was appointed to the office a little over a year ago, having been previously Traffic Manager of the trans-Ohio lines.

—Mr. Albert Langmaid has resigned his position as Master Car Builder of the Northern (New Hampshire) and Concord & Claremont roads.

—Mr. W. G. Brimson has resigned his position as Superintendent of the Logansport, Crawfordsville & Southwestern road.

—Mr. James L. Faulkner, formerly of Rutland, Vt., and at one time Superintendent of the Harlem Extension Railroad, died Jan. 18, in Texas.

—D. Thomas Vail, President, and Daniel Robinson, Vice-President and Treasurer of the Troy & Boston Company, are charged with mismanagement and fraud in connection with the Merchants & Manufacturers' Bank, the Troy Savings Bank and the Schaghticoke Woolen Mills, which they controlled. The railroad company is said to be involved also.

—It is reported that Mr. D. Pottinger, now General Storekeeper, is to succeed Mr. R. Luttrell as Superintendent of the Intercolonial Railway, and that a number of other changes are to be made.

—Mr. Israel Smith, formerly for a number of years Chief Engineer of the New Jersey Railroad, died suddenly Feb. 4, at his residence in New Brunswick, N. J. Mr. Smith left the New Jersey road several years ago and went to Virginia to live, but lately he returned to New Jersey and accepted a position on the Pennsylvania Railroad.

—An Ottawa dispatch of Feb. 5 says that the new Canadian Government has removed Mr. C. J. Brydges from his position of General Superintendent of Government Railways, Mr. Brydges has had long experience in Canada, having been manager of its two chief roads, the Great Western and afterward the Grand Trunk, before entering the government service. It is understood that his removal is for political reasons entirely.

TRAFFIC AND EARNINGS.

Southwestern Railway Association Rates.

A circular from Commissioner Midgley announces the following rates on stock per car-load, to take effect Feb. 10:

Mo. River points to St. Louis, Louisiana, Hannibal, West Quincy, Burlington	Stock.	Hogs.	Sheep (single deck).
Chicago	$50.00	$40.00	$30.00
	67.50	57.50	45.00

From Feb. 1, the rate on wool from Missouri River points will be, to Mississippi River points, 35 cents per 100 lbs.; to Chicago, 50 cents.

Fruit in car lots from Atlantic seaboard points to Missouri River points will be charged the following rates: From Toledo, 56 cents per 100 lbs.; Chicago, 39; St. Louis, 22; Hannibal, 18.

Hereafter the same rates will govern on fourth-class and special freight shipped by all-rail routes, on through bills of lading, from Mobile and New Orleans to Missouri River points, as are applied on the same classes of business coming from Atlantic seaboard points.

Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending Nov. 30:	1877-78.	1876-77.	Inc. or Dec.		P.c.
Ind., Bloom. & Western, Main Line	$1,204,455	$1,137,896	I.	$66,559	5.8
Net earnings	302,807	349,568	D.	46,761	13.4
I., B. & W., Western Extension	137,868	143,344	D.	5,476	3.8
Deficit	36,730	45,107	D.	8,377	18.6
Year ending Dec. 31:	1878.	1877.			
At., Miss. & Ohio	$1,718,456	$1,776,018	D.	$57,562	3.2
Central, of Iowa	755,634	732,542	I.	23,092	3.2
Net earnings	180,067	209,747	D.	29,680	14.2
Huntingdon & Broad Top	240,041	261,410	D.	21,369	8.2
Net earnings	115,009	139,790	D.	24,781	17.7
Mobile & Ohio	1,901,998	1,989,454	D.	87,456	4.4
Philadelphia & Erie	2,921,061	3,172,989	D.	251,928	7.9
Net earnings	976,111	1,123,363	D.	147,252	13.1
St. Louis, Kan. City & No	3,324,495	3,147,174	I.	177,321	5.6
Net earnings	1,347,500	1,250,773	I.	96,727	7.7
St. Louis & Southeastern	1,186,921	1,099,503	I.	87,418	8.0
Net earnings	283,331	249,407	I.	33,924	13.6
St. Paul & Sioux City	604,186	544,964	I.	59,222	10.9
Net earnings	239,506	207,632	I.	31,874	15.4
Sioux City & St. Paul	387,544	342,939	I.	44,605	13.0
Net earnings	123,740	115,470	I.	8,270	7.2
Worthington & Sioux Falls	102,316	49,477	I.	52,839	106.8
Net earnings	55,080	27,716	I.	27,364	98.8
Western Union	1,061,731	1,025,058	I.	36,673	3.6
Net earnings	307,956	326,039	D.	18,083	5.5
Month of November:					
Alabama Great Southern	$37,001	$27,254	I.	$9,747	35.7
Month of December:					
At., Miss. & Ohio	$143,240	$162,088	I.	$18,848	11.6
Houston & Texas Central	380,477	358,828	I.	21,649	6.0
Net earnings	224,806	188,887	I.	35,919	19.0
Mobile & Ohio	284,224	313,621	D.	29,397	9.4
Philadelphia & Erie	225,308	257,742	D.	32,434	12.6
St. Paul & Sioux City	49,570	46,605	I.	2,965	6.4
Sioux City & St. Paul	35,928	33,791	I.	2,137	6.3
Worthington & Sioux Falls	10,601	9,311	I.	1,290	12.9
Month of January:	1879.	1878.			
Chicago, Mil. & St. Paul	$592,000	$705,805	D.	$113,805	16.0
Chicago & Alton	341,075	301,073	I.	40,002	13.3
Third week in January:					
Atchison, Topeka & Santa Fe	$93,000	$45,286	I.	$47,714	105.3
Chicago & Alton	92,390	75,010	I.	17,380	23.2
St. Louis, Iron Mt. & Southern	95,960	107,814	D.	11,854	11.0
Wabash	76,869	105,508	D.	28,639	27.1
Week ending Jan. 17:					
Great Western	$74,904	$105,081	D.	$30,177	28.7
Week ending Jan. 24:					
Great Western	$82,923	$122,340	D.	$39,417	32.2
Week ending Jan. 25:					
Grand Trunk	$172,680	$171,229	I.	$1,451	0.8

Grain Movement.

For the week ending Jan. 25 receipts and shipments of grain of all kinds have been, in bushels, for the past six years:

Year.	Northwestern—Receipts.	Northwestern—Shipments.	Atlantic receipts.
1874	2,008,992	1,075,915	2,445,813
1875	2,934,219	1,048,423	1,655,432
1876	2,033,404	638,319	1,669,941
1877	1,721,443	727,113	1,461,707
1878	3,513,465	2,488,526	3,517,023
1879	3,315,970	1,309,977	2,911,915

The shipments from the Northwest and the receipts at the seaboard continued to be reduced by the effects of the snow blockade early in January.

Baltimore grain receipts in January were as follows:

	1879.	1878.	Inc. or Dec.		P. c.
Flour, barrels	86,793	116,215	D.	29,422	25.3
Wheat, bushels	1,283,601	894,391	I.	389,210	43.5
Corn	1,693,428	1,691,745	I.	1,683	0.1
Other grain	85,153	33,007	I.	52,146	157.7
Total grain	3,062,182	2,619,143	I.	443,039	16.9
Total, flour reduced to bushels	3,496,147	3,200,218	I.	295,929	9.2

Exports for the month were 30,415 barrels of flour and 2,021,100 bushels of grain.

San Francisco receipts for the week ending Jan. 25 were 5,903 barrels flour, 311,895 bushels wheat, 57,480 bushels barley, and 14,257 bushels other grain.

Coal Movement.

Coal tonnages are reported as follows for the week ending Jan. 25:

	1879.	1878.	Inc. or Dec.	P. c.
Anthracite	371,706	183,501	I. 188,205	102.6
Semi-bituminous	43,399	.....	.....	....
Bituminous, Pennsylvania	34,517	.....	.....	....
Coke, Pennsylvania	29,673	.....	.....	....

A small reduction in prices of anthracite is reported.

The coal tonnage of the Pennsylvania Railroad for the year ending Dec. 31 was as follows:

	1878.	1877.	Inc. or Dec.	P. c.
Anthracite	771,912	799,654	D. 27,742	3.5
Semi-bituminous	1,606,682	1,715,766	D. 109,084	6.4
Bituminous	1,534,094	1,571,254	D. 37,160	2.4
Coke	1,085,990	867,218	I. 218,772	25.2
Total	4,998,678	4,953,892	I. 44,786	0.9

The large increase in coke shipments is notable. It was chiefly from the Connellsville region.

Cotton.

Receipts for the week ending Jan. 31 and for the five months of the crop-year then ending were, in bales:

	1879.	1878.	1877.	1876.	1875.
Week	167,097	159,186	138,374	131,379	108,152
Crop-year	3,269,740	3,117,741	3,144,189	3,066,184	2,635,772

The exports were:

	1879.	1878.	Increase.	P. c.
Week	130,551	101,209	29,342	29.0
Crop-year	1,904,414	1,721,502	242,912	14.1

This year 55½ per cent. and last year 64⅝ per cent. of the exports were from New Orleans.

Ocean Rates.

The wheat freight market in San Francisco is very dull. Nominal rates are 32s. 6d per ton for wooden, and 35s. for iron vessels to Liverpool or Havre; 35s. for wooden, and 37s. 6d. for iron vessels to Cork for orders. Latest reports give vessels with a total capacity of 31,500 tons in port under charter, and 62,300 tons not engaged.

East-Bound Rates.

A dispatch from Chicago, Feb. 5, says: "The general managers of the Lake Shore, Pittsburgh, Fort Wayne & Chicago and Michigan Central railroads held a meeting today to try and patch up the difficulties about the east-bound freight and passenger business and rates. The conference was a long and earnest one, and not very harmonious, each road trying to lay the blame on the other. The Vanderbilt managers contended that the Pennsylvania Road's increase of business had been secured by cutting rates, while Mr. McCullough insisted that his roads maintained rates as strictly as Vanderbilt's lines maintained them, and that the reason for the Pennsylvania's increase in traffic was its comparative exemption from the recent snow blockade. It was finally decided to defer the whole matter until to-morrow, when it is expected to have some information from the New York meeting of trunk line Presidents for action relative to the continuance of the west-bound pool."

RAILROAD LAW.

Presumption of Negligence in Carrier.

In Miller against the Pennsylvania Railroad Company, a carriage was shipped on defendant's road from New York to Pittsburgh, and arrived at its destination damaged by fire. The company neglected or refused to furnish the consignee-owner information as to the manner in which the damage occurred, and in the trial of the case he rested upon these facts clearly made out. The Pennsylvania Supreme Court held that the law raised a presumption of negligence in the defendant, which could only be repelled by satisfactory evidence. The evidence given by the defendant must account to the satisfaction of the jury for the fire, and also for the conduct of defendant's agents toward the plaintiff.

Maryland Tax Cases.

The Maryland Court of Appeals, on Jan. 30, filed its decision in the appeals in the tax cases of the Western Maryland and the Union companies. It is reported as follows in the Baltimore *Gazette*:

"Judge Alvey delivered the opinion of its Court. Under the law by which these appeals are brought to this Court, he said, there are but two questions open for consideration: First, whether the property assessed is rightfully assessed to the particular individual or corporation as the owner thereof, and secondly, where claim is made that particular property is exempt from taxation, whether such claim be well founded or not. All other questions arising under the assessment laws are left to the decision of the boards of revision, to whom ample power is given to correct any errors that may be found to exist in the assessment. Neither company make claim that their shares are exempt in the hands of the shareholders. The court below held the real and personal property of the appellees embraced in the assessments exempt on the ground that, by the terms of the statute, their capital stock was liable to be assessed. That may be correct, says the Court, under act of 1878, chapter 413. The first question is what was the effect of the passage of that act upon the assessment previously made under the act of 1876, chapter 260, as the basis of the levy for the year 1877. The appellees' claim under act of 1878, chapter 413, that there is no authority for the maintenance of the assessment or the collection of taxes, except from the shares of capital stock, because that act excluded from assessment the property, real and personal, of corporations incorporated by this state, having a capital stock divided into shares and where such shares are subject to taxation as the property of the owner thereof. The appellees also contend that the process of assessing the particular property in question had not been completed before the law authorizing it had ceased to exist and that with the law ceased all power to proceed further with the assessment of that particular property. The Court thinks there is no warrant for this last construction and that as far as the state's officers were concerned the work of assessment was complete under the law of 1876, and that the first sub-section of the act of 1874, chapter 483, gave the state full authority for making the levy upon the property so assessed. Upon the whole, says Judge Alvey, this court is of the opinion that the orders appealed from in these cases should be reversed and the records remanded that the assessments in question be made to conform to the principles decided and announced in this opinion as the basis of the levy for the year 1877."

Proposed Railroad Legislation.

A law has been introduced into the Nebraska Legislature limiting the charge for fares by rail to three cents per mile on passenger trains, and to two cents on freight trains.

Concerning the work now before the Kansas Legislature, a correspondent of a Chicago paper says: "The question of regulating railroad fares and freights by law is also a matter of great importance, and likely to absorb much time and provoke much discussion. It is safe to predict a large majority of both houses in favor of a moderate restrictive law, and the fact that it costs 15 cents per bushel to move wheat 300 miles to market in Kansas, and only 7 cents from Chicago to New York, all rail, at certain seasons of the year, is a difficult conundrum for the railway officials to meet in any way except by bulldozing, or bowing to the will of the people."

Property in Rerolled Rails.

In Arnott against the Kansas Pacific Railway Company (19 Kan., 95), a railroad company made a contract with a rolling mill company for the making of new rails out of old rails supplied by the railroad, with the addition of new iron, to be supplied by the mill, which was required for the top of the rails.

Held, that if the railroad furnished the chief or principal part of the material of the new rails, the property in the material and in the new rails as finished remained in the railroad.—*American Law Review.*

THE SCRAP HEAP.

Railroad Equipment Notes.

It is stated that J. M. Jones & Co., of West Troy, N. Y., have bought the car works at Schenectady, N. Y., and that they will remove their business to that place.

The Barnum & Richardson Manufacturing Co., at Chicago, is turning out 60 car-wheels per day on orders.

The Missouri Car & Foundry Co., at its leased shops in Cambridge City, Ind., employs about 200 men. A large order for box cars has been received from the Chicago, Pekin & Southwestern road recently.

Iron and Manufacturing Notes.

The committee appointed by the stockholders of the St. Albans (Vt.) Iron & Steel Works, has recommended that an issue of $150,000 five-year 6 per cent. notes be made, $120,000 to be used in settlement of all the present debts of every description, and $30,000 to be sold to the stockholders to furnish working capital; also that the claim of Philo Remington for a patent of his which has been used by the company, be settled by the issue of $64,000 stock to him.

The Passaic Rolling Mill Co., at Paterson, N. J., gives notice that its mills, part of which were recently destroyed by fire, have been completely restored, and that the facili-

ties for increasing the production and reducing its cost have been greatly improved.

The Rome (N. Y.) Iron Works have orders for 4,000 tons of rails from Western parties.

The Phœnix Iron Co. has leased the Fulton Rolling Mill at Norristown, Pa., from the Philadelphia & Reading Coal & Iron Co., and will soon start it up.

An order for 25,000 tons of steel rails for the New York, Lake Erie & Western road has been given out, 5,000 tons each to the Lackawanna Iron & Steel Co., the Bethlehem Iron Co. and the Albany & Rensselaer Steel & Iron Co., and 10,000 tons to the Pennsylvania Steel Co.

The Keystone Iron Works, at Pittsburgh, started up Jan. 20, after a stoppage of one month.

The Indianapolis Rolling Mill Co. has declared a cash dividend of 3 per cent. from the profits of the year 1878.

The Roane Iron Co., at Chattanooga, Tenn., will declare no dividend for last year, the profits having been used to build the new steel works.

The Columbus (O.) Rolling Mill has started up on a contract to reroll iron rails for the Pittsburgh, Cincinnati & St. Louis. A general reduction of 10 per cent. in wages has been made and agreed to by the employés.

The Springfield (O.) Malleable Iron Works are making a large lot of car-seat castings for the Ohio Falls Car Co.

Hussey, Howe & Co., at Pittsburgh, are now running their new seven-ton Siemens-Martin steel furnace.

Mr. John Birkenbine, of Philadelphia, has been appointed General Manager of the South Mountain Iron Co. This company's Pine Grove Iron Works, in Cumberland County, Pa., were founded in 1770, and have run since with but few interruptions, though with several changes of ownership.

The rail mill of the Pennsylvania Steel Works, at Baldwin, Pa., in a run of nine consecutive turns, from Jan. 8 to Jan. 14, 108 hours in all, turned out 6,108 rails, 30 ft. long, 50 lbs. to the yard. The highest number turned out in one turn of 12 hours was 756 rails.

Bridge Notes.

The New York Bridge Co. has contracts for a span of 150 ft. at New Haven, Conn.; one of 140 ft. at Rosendale, N. Y.; one of 70 ft. at New Baltimore, N. Y.; one of 65 ft. at Whiteport, N. Y.; one of 65 ft. at Conway, Mass., and one of 60 ft. at Cornwall, N. Y. The company has just finished a span of 140 ft. at Long Island City, N. Y.

The Bridge at Schaghticoke Point, N. Y., on the Boston, Hoosac Tunnel & Western road, built by Cofrode & Saylor, of the Philadelphia Bridge Works, was put up in a little less than a week. There were seven spans, 540 ft. in all, besides a small bridge of 65 ft. span.

Prices of Rails.

Steel rails are reported firm at $41 to $42 at mills, and the mills have orders for some time ahead. The New York, Lake Erie & Western has placed orders for 25,000 tons for fall delivery, 10,000 tons with the Pennsylvania Steel Co., and 5,000 each with the Bethlehem Iron Co., the Lackawanna Iron & Steel Co. and the Albany & Rensselaer Steel & Iron Co. The prices reported are $42.50 to $43 delivered, which would make about $41 at mill. The Lackawanna Co. also has an order for 3,000 tons to go South. Some large orders are still on the market.

Iron rails are quiet, with prices unchanged at $32 to $35 per ton at mill. Present demand is chiefly for light sections and in lots of moderate size. The purchase of 3,500 tons by the Northern Pacific from the Springfield (Ill.) Iron Co., reported last week, was at $39 per ton, delivered in St. Paul. Prospects for a good spring demand are said to be favorable.

Old rails in New York are quoted at $19.50 to $20 per ton, with sales of 4,100 tons reported on private terms. In Pittsburgh, steel-rail ends are quoted at $28 to $32 per ton.

Spikes.

It is remarked, and if true it is a curious fact, that very few Germans are to be found among trainmen on railroads, or even as trackmen. Americans, Irishmen, and in the Northwest Swedes, are plenty, but Germans do not seem to take kindly to railroad work.

An employé of the Texas & Pacific started out recently to get married to a widow at New Boston, Tex. Through some blunders his wedding clothes were put off at Belleplain, hers carried on to DeKalb, while the minister fell asleep and was carried on to Texarkana. In spite of all these tribulations the railroad man was married on time.

The colored engineer of a train in Georgia saw a cow on the track a few hundred yards down the line, whereupon he stopped the train, got out with a shovel in his hand, and striking the beast on the back, yelled: "Git off dar, d'ye heah, git off, or I'll squirt steam all over yer!"

Railroad contractors have little respect for scenery. One has just earned the deserved maledictions of æsthetic New England by cutting down a group of hemlocks on the banks of the Assabet in Concord, which made one of the prettiest bits of scenery in Massachusetts, and were noticed by Hawthorne and Thoreau in their writings.

Tramps.

A few days ago, as a freight train stopped at Union City, cries were heard coming from a boiler standing on a freight car. On opening the door of the fire-box a full-grown negro was discovered inside. He got on at Venango, and, seeing the door of the fire-box open, he went inside so as not to be discovered, but found to his horror that he could not open the door from the inside.—*Meadville (Pa.) Journal, Jan.* 30.

A tramp while attempting to board a freight train near James street, to-day, fell under the cars and the entire train ran over him. He escaped without a scratch. Later in the day he crawled in a cattle car going east.—*Utica (N. Y.) Herald, Feb.* 3.

Henry Ward, a tramp, has been sent to the Chester County almshouse with his legs in a bad condition. He picked up a signaling torpedo on the Pennsylvania Railroad, near Coatesville, put it between his knees and hammered away with a stone. The torpedo exploded, severely wounding him.—*Philadelphia Times, Feb.* 3.

Government Telegraph in England.

The London *Pall Mall Gazette* says: "The explanation of the inactivity in the Telegraph Department may possibly be discovered in the tables which show the total number of messages forwarded in each year, and the net revenue earned. It is certainly a most striking fact that the first year's management by the government was, if we may trust these tables, by far the most profitable. It rarely happens, we should imagine, except in companies which pay their dividends out of capital, that the first balance sheet is so favorable. It is impossible to arrive at the exact profit earned on each message, as certain miscellaneous receipts are included. As, however, these receipts affect the accounts of each year, we shall not be far out, so far as the comparison of the different years goes, if we divide the net revenue by the number of messages sent. The following is the result obtained —we disregard fractions of a farthing: In 1871, on each message sent, the gain was 7¼d.; in 1872, 3d.; in 1873, 1¾d.; in 1874, 1½d.; in 1875, ½d.; in 1876, 2¾d.; in 1877, 2d.; and in 1878 it was 1¾d. What is still more extraordinary is the fact that whereas the gross revenue from the 9,850,000 messages that were sent in the year ending April, 1871, amounted to £908,000, the gross revenue from the 22,171,000 messages sent last year amounted to only £1,486,000. In other words, in 1871 the gross revenue on each million messages amounted to more than £90,000, whereas last year, without any diminution in the charge, it amounted to less than £70,000."

Steel and Iron in England.

Ryland's *Iron Trade Circular* of Jan. 18, published in London, England, says, under the head of manufactured iron: "In our last circular we noticed the revolution produced in the rail trade by the adoption of steel instead of iron. This change has made further progress during the year, and to such an extent that many are exclaiming, 'The age of iron is passing away, and the age of steel has arrived.' Whatever the future of steel *versus* iron may be, there is no doubt that, during the past year, the close proximity in price between steel and iron rails has effectually secured a preference for the former. Steel rails were sold as low as £5 to £5. 5s. at works, and iron could not be obtained at a greater reduction than 10s. per ton, Considerable attention is now being directed to steel plates for ship-building, and, although no great quantity has yet been rolled, it may with certainty be affirmed that, if prices can only be reduced to anything near the present difference existing in the case of rails, a revolution in ship-building may be looked for, only second to that which has already taken place in rails. According to Mr. J. S. Jeans, Secretary to the British Iron Trade Association, there were 39 Bessemer and Siemens-Martin works, capable of producing 1,510,800 tons, and the estimated production in 1877 was 890,900 tons. In connection with this branch of the trade, it should be borne in mind how largely dependent we are on foreign countries for supplies of cheap hematite ores, the quantity imported in 1877 being 1,140,434 tons, and in 1878 1,173,860 tons. This fact may have an important bearing on the future of the Bessemer steel trade, and affect prices to some extent."

To Companies Wanting an "Orditor" with Brains.

The following application for the position of auditor was received, according to the St. Louis *Globe-Democrat*, by one of the largest roads in the West:

"I learn confedentally that you want a new orditor, fr your rail rode. If that is so I would like the Job, for I am a gragawate of the Kansas Citty Commercial College. Ard no all about counts. I have not had eny experience in rale rodes, but I have got branes, and branes count in the long run. giv me a trile and if I cant lay over enny man you have had, I dont want a cent. Adress —— ——, Kansas Citty, Mo."

A Dog Who Should be Made Made Watchman.

As engine No. 344, Mr. John Shedd engineer, was nearing Ridgewood recently, running west with a freight train, and when rounding a curve three children were discovered playing on the track but a short distance in advance of the approaching train. The whistle was blown, and two of the children ran from the track, leaving the other in her perilous situation, apparently dazed, while its mother stood not far distant bewildered beyond the power of assisting her little one. At the instant the pilot of the engine was about to strike the child a large dog, thought by the engineer to be a Newfoundland, sprang upon the track, and seizing the child by its clothing succeeded in dragging it to a place of safety. This wonderful incident of canine sagacity comes to us pretty well authenticated.—*Port Jervis (N. Y.) Gazette.*

A Veteran Locomotive.

Standing all alone in the midst of the ruins of the Atchison & Nebraska roundhouse, dismantled and wrecked, the picture of the most conceivable uselessness, is the old locomotive, the Antelope. With two or three exceptions this old engine is one of the most noted in the United States, and the old frame, even as it now stands, should be put carefully away, in commemoration of the good it has done. Nearly 28 years ago this engine came to the Michigan Central Railway, the great head centre of the railroad combination which has since become famous as the Joy roads. It was a passenger locomotive, built then after the most modern and improved style, and in fact, was the object of several new improvements. Its trial marked it as an engine of unusual speed, and the Antelope had a name and fame along the Michigan Central that was equaled by no engine in the country. In 1853 it was transferred to the Chicago, Burlington & Quincy road, which road was also in its extreme youth, and the Antelope was the first engine to pull a passenger train into the town of Galesburg, an old engineer, named Van Patten, being at the throttle, and no less a personage than Major D. N. Wheeler, the popular Atchison & Nebraska Master of Transportation, being the conductor. Here the Antelope revived and increased her reputation as a fast runner, and became famous all over the West as the fastest locomotive engine known, having indeed made some remarkable runs. As the Joy roads branched out, and new schemes were inaugurated, the Antelope followed them, going first to the Leavenworth, Lawrence & Galveston, where it pulled the first passenger train, afterward to the Missouri River, Fort Scott & Gulf, where it performed a like service, in both places making the same reputation. Finally, in September, 1870, then nearly twenty years old, the veteran was brought to Atchison, to take part in the building of the Atchison & Nebraska road, the latest of the Joy interests. Twenty years had greatly changed and improved the manufacture of locomotives, and what in 1852 was a clipper-built, handsome looking engine, in 1878, was an uncouth and ill-proportioned piece of machinery. But the Antelope had not outlived its useful days, even if its beauty had faded, and its first work was done as the constructing engine. And noble work did it do, until the road was extended from Atchison to Lincoln. Then it was decreed that old age had overtaken it, and a special track was built in the rear of the Atchison & Nebraska paint shops, and for several years the old engine was laid away, exposed to storm of winter and heat of summer, idle, and as everybody supposed, useless. Finally, about two years ago, Col. Towne again took it in hand. It was placed in the shops, thoroughly rebuilt, repainted and sent to Lincoln to do duty as yard engine. Faithfully and thoroughly did it accomplish its mission eighteen months, until its old bones again gave way and it was sent to the Atchison & Nebraska shops again for repairs. The repairs had been completed; it had been painted and gilded until it shone as brightly as the Antelope of 1852, and the day after the fire it was to have again entered upon its mission. That night the fire came, and the dismantled old wreck stands there, grimly and skeleton-like, the woodwork burned out, its numberless flues staring the passer-by like the gaunt and grinning skull of a skeleton. Its days of usefulness are gone.—*Atchison (Kan.) Patriot, Jan.* 30.

OLD AND NEW ROADS.

Atlantic & Great Western.—In the Court of Common Pleas at Akron, O., last week, argument was heard on three important motions in the suits against this company: first, a motion by the attorneys of Canda and Horsey, trustees of the first Ohio mortgage, for the foreclosure of the same, and the sale of that portion of the road covered by it, including all of the line in Ohio, and the greater part of the Cleveland & Mahoning lease: second, for the amendment of a previous order of the court approving the contract between the United States Rolling-Stock Company and the Atlantic & Great Western Railroad Company *et al.*, relating to the payment of the Rolling-Stock Company's certificates by the Receiver, J. H. Devereux, and their priority over other claims; third, for a construction of certain parts of the rolling-stock contract. A number of counsel were heard, and the court reserved its decision on all the motions.

Atlantic & Gulf.—In the appeal of this company from the Georgia Supreme Court, the United States Supreme Court has given its decision affirming the liability of the company to taxation by the State of Georgia, on the ground that the act of 1863 consolidating the Savannah, Albany & Gulf Railroad and the Atlantic & Gulf Railroad, operated to create a new corporation, and thus deprived those companies of the privileges and immunities granted by their original charter. The present suit involved the taxes for 1874 and 1875, amounting to about $41,000, and the taxes for 1876, 1877 and 1878, whose collection waited the decision of this suit, will also have to be paid.

Boston, Clinton, Fitchburg & New Bedford.—At a special meeting held in Framingham, Mass., Jan. 31, the stockholders voted to ratify and confirm the lease of the road to the Old Colony Railroad Company.

Chicago & Northwestern.—This company has agreed to extend its Tipton Branch from Tipton, Ia., southward to Springdale, about 10 miles, provided the towns interested will vote a 2 per cent. tax in aid of the road.

Chicago, Rock Island & Pacific.—An order took effect on this road on Feb. 1, under which freight conductors and brakemen will be paid according to the actual mileage run, instead of by the month or trip. Conductors are furnished with blanks on which to report at the end of each trip the mileage made by themselves and their crews. It is said that in many cases this method of paying will slightly increase the wages of the men.

Cincinnati, Sandusky & Cleveland.—Holders of about $800,000 out of $1,070,000 second-mortgage bonds have now joined in the funding agreement. It is stated that the earnings of the road thus far in this fiscal year (ending June 30, 1879) have shown a very considerable improvement, and the expenses are less, so that the managers entertain no doubt of their ability to pay interest on the second-mortgage bonds after June 1, 1880, when payment is to be resumed according to the agreement.

Cincinnati Southern.—The iron bridge over the Cumberland River is now completed and was last week finally tested and accepted from the builders. The contractors now have track laid to a point 13 miles southward from Somerset, Ky., and 11 miles beyond the point where the work stopped over a year ago.

It is reported that the Trustees will soon take the finished section of the road from the Common Carrier Company, which has been working it, and will themselves manage its operations.

Council Bluffs & St. Louis.—Notice is given that sealed proposals will be received at the office of S. T. Emerson, Chief Engineer, in St. Louis, until Feb. 14, for the grading, masonry, bridging and trestle-work of this road for 60 miles northwest from Pattonsburg, Mo. Plans, specifications, etc., can be seen at the office. This is the St. Louis, Kansas City & Northern's new line to Omaha.

East Line & Red River.—The grading is now completed to Sulphur Springs, Tex., and tracklaying will soon be resumed. The bridges are all up, and ties are on hand, and everything promises that the road will be completed next season.

Georgetown.—We are informed that this road, which connects Georgetown, Tex., with the International & Great Northern at Round Rock, is but 10 miles long, instead of 20, as has been stated.

Grand Rapids & Indiana.—This company last year offered premiums on each of its divisions to the track foremen showing the greatest improvement on their sections during the year. The conditions of the competition were to be the success of the several competitors in improving the smoothness of the track for the running of trains, making the embankments, grading and ditching uniform, conformably to the standard as to the surface and drainage, careful oversight of the company's property and economy in the use of supplies. Another condition was that of keeping the right-of-way or grounds within the inclosure along the track free from weeds and rubbish. The awards, which varied from $10 to $45, were recently made, and the officers of the road are much pleased with the result, all sections showing a decided improvement.

Houston, East & West Texas.—Contracts have recently been let for several additional sections, which, when completed, will carry the road to a point within 18 miles of the old town of Nacogdoches.

Kansas City, Emporia & Southern.—It is said that a contract has been closed to build this road from Emporia, Kan., south to Eureka, about 45 miles. It will be a branch of the Atchison, Topeka & Santa Fe, and that company will aid in its construction.

Kendall & Eldred.—It is proposed to extend this road from Eldred, Pa., northeast, by way of Bolivar, Scio and McHenry Valley to Hornellsville, N. Y., about 45 miles. The route is said to be nearly direct and not difficult of construction.

Little Falls & Dakota.—This company has been organized to build a railroad from Little Falls, Minn., on the Western Railroad of Minnesota, through Sauk Centre, Glenwood and Morris to the Dakota line, about 120 miles.

Longview & Sabine Valley.—This road has track laid to a point 12 miles southward from Longview, Tex., and is running daily trains over the road.

Maysville & Big Sandy.—An effort is being made to revive this project. The company was chartered several years ago, and secured the right of way from Maysville, Ky., to a point opposite Portsmouth, O., about 45 miles. Some grading and bridging was also done, and the organization of the company has been kept up.

Metropolitan Elevated.—In the matter of the complaints made to him some time ago, the Attorney-General of New York has decided to take no action, considering that the matters complained of should rather be submitted to the Legislature for its action, if any is needed.

Minneapolis Eastern.—This company intends to build a road from Minneapolis, Minn., to St. Paul, with sidings or spurs reaching to all the mills. Recently application was made to the Court by the company for a commission to condemn certain lands in Minneapolis. The Court has refused to grant the application on the grounds that the spur track

desired is not necessary to the operation of the road, and that part of the land belongs to the Minneapolis & St. Louis Company. The plaintiffs cannot condemn this land unless authority is given by special charter or grant from the Legislature. Petitioners are given leave to file a new and amended bill.

Missouri, Kansas & Texas.—In the matter of the application of Russell Sage and N. A. Cowdrey, trustees under the Union Pacific, Southern Branch mortgage, for an accounting by this company and the Union Trust Company, Trustee in possession of the road, for the proceeds of sales of lands, Judge Speir in the New York Supreme Court has decided that the plaintiffs' mortgage lien upon these lands is not in any way affected by the sales made by the railroad company, and that therefore the plaintiffs are not entitled to an accounting. The Union Trust Company in the same suit asks for an affirmative judgment, that plaintiffs join in the deeds given upon the sales of these lands, upon receiving bonds secured by plaintiff's mortgage, at par value, whether cash or bonds are given by the purchasers. Judge Speir decides that the Trust Company is entitled to relief in the matter, but what specific relief they may have he will determine upon the entry of the judgment.

Morgan's Louisiana & Texas.—The Louisiana Legislature has passed the following act relating to this road:

"1. That the railroad which is now being extended beyond Morgan City, by Morgan's Louisiana & Texas Railroad and Steamship Company, shall be completed to Vermillionville within eighteen months from the passage of this amended act; and to some point on the Sabine River or Texas boundary line by said company, or other company connecting with them, within eighteen months thereafter.

"2. When the said road shall be completed to Vermillionville, La., a distance of about 63 miles from Morgan City, all the privileges and franchises granted by the said act No. 37, approved March 8, 1877, shall be fully vested in said company; provided, however, that if the road be not completed to the Sabine River or the Texas boundary line within the time above stipulated by the said Morgan Company, or other company uniting with them, then the railroad franchises herein granted shall extend from New Orleans only to that point of the road which shall be completed within the stipulated time by said company, or other company acting with or under them."

Natchez, Jackson & Columbus.—This road was opened in October last to a point 8½ miles beyond the late terminus at Meriwether, Miss., and 43 miles east by north from Natchez. Trains are running to the new terminus regularly.

New Jersey Southern.—It is reported that this road is to be leased to the Central Railroad of New Jersey for a long term of years. The Central has desired an extension down the New Jersey shore below Long Branch and Squan, and would doubtless be very willing to have the entire control of the great summer travel to Long Branch, which this lease would give it. It does not seem probable, however, that any definite lease can be made until after the foreclosure sale of the Southern road, which is now announced to take place this month. There are legal questions as to the ownership of parts of the road, which might be made to give a good deal of trouble to a purchaser or lessee.

New York & Oswego Midland.—The shops lately burned at Middletown, N. Y., are to be rebuilt, and it is said that part of the work now done in the Oswego shops will be taken to Middletown.

Old Colony.—A special meeting was held in Boston, Jan. 31, when 35,230 shares were voted in favor of ratifying the lease of the Boston, Clinton, Fitchburg & New Bedford road, to 725 against. The meeting adjourned to Feb. 5, when the polls were to be opened again, but any additional votes cast can make no difference, as there is already a majority for the lease.

Oregon Central.—Oregon papers state that the German bondholders have decided to extend this road this year from the present terminus at St. Joseph in Yamhill County, southward by way of Amity and Dixie to Corvallis, about 50 miles.

Paris & Danville.—The sale of $500,000 bonds of this road, part of the assets of the Danville (Ill.) Banking & Trust Company, to Charles Ridgley has been confirmed by the Court. It is understood that Mr. Ridgely buys them for account of the Wabash Company, which thus acquires a controlling interest in the bonds, and consequently in the foreclosure and reorganization proceedings. The opposing bidders were parties interested in the Chicago & Eastern Illinois road. The price paid was $52,500.

Philadelphia & Reading.—The Philadelphia *Ledger* of Feb. 3 says: "As a great deal of very sensational matter has been published on the subject of the delay in the payment of the wages of the colliery employés of the Philadelphia & Reading Coal & Iron Company, it may be well to state authoritatively that one-half of all December wages are already paid; that the remaining half will be paid this week, when the company will owe nothing but the January wages, which, it is expected, will be promptly paid at the usual pay-days. * * * The officers of the company inform us that the delay in the payment of the December wages was due to the very large amounts which had to be provided for the January interest and rentals, and we are told that since Jan. 1 the Railroad Company and the Coal & Iron Company have paid out in cash for interest, rentals and wages the large sum of $1,412,000, and, in addition thereto, have redeemed $396,150 of the wages-certificates, making a total of $1,808,000, the payment of which, in the present condition of the company's credit, has made it necessary temporarily to allow some arrearages of wages to accumulate, nearly all of which are now discharged."

Portland & Ogdensburg, Vermont Division.—Argument was heard, last week, at St. Johnsbury, Vt., on the petition of the Receivers for leave to issue $500,000 certificates, to be a first lien on the road. For the bondholders it was contended that the Court had no power to make a new first lien upon the road, and that the amount is excessive. The Chancellor took the papers and said that his decision would not be ready for a fortnight.

Providence & Worcester.—At the annual meeting in Providence, Feb. 3, resolutions were offered rescinding the vote authorizing the issue of $2,000,000 consolidated bonds and limiting the issue to $1,000,000; authorizing the issue of $1,000,000 new stock for the purpose of paying the unfunded debt and the old bonds falling due in 1880; providing for a sinking fund sufficient to pay all other bonds at maturity, and declaring the construction account finally closed. All the resolutions were discussed and then referred to the board of directors to examine and report thereon at the next annual meeting, or at a special meeting, if they saw fit.

River Falls.—At a recent meeting of the stockholders, it was voted to extend this road from River Falls, Wis., to Ellsworth, 15 miles, next summer, provided sufficient subscriptions are secured on the line.

St. Louis & San Francisco.—It is stated that this company has made arrangements with the Missouri, Kansas & Texas, by which it secures a share in the Texas business to and from St. Louis. General Freight Agent Cassidy announces in St. Louis that freight will be received for all Texas points, and that cars will be run through without breaking bulk at Vinita

St. Louis & Southeastern.—Auditor Young's report for the month of December is as follows:

	St. Louis Div.	Kentucky Div.	Tenn. Div.	Entire line.
Earnings	$57,862.45	$27,430.47	$14,648.12	$99,941.84
Expenses	39,388.81	22,918.79	10,711.73	73,019.33
Net earnings.	$18,473.64	$4,511.68	$3,937.19	$26,922.51
Per cent. of expenses	67.91	83.65	73.12	73.03

As compared with December, 1877, the entire line shows an increase of $7,630.09 or 8.3 per cent. in gross, and of $6,177.57 or 26.1 per cent. in net earnings. The increase was almost entirely on the St. Louis Division.

St. Paul & Sioux City.—This company's statement for the year ending Dec. 31 is as follows:

	1878.	1877.	Inc. or Dec.	P. c.
Freight	$438,827.86	$399,203.74	I. $39,624.12	9.9
Passengers	139,257.88	118,821.82	I. 20,436.06	17.2
Other sources	26,100.59	26,939.26	D. 838.67	3.1
Total	$604,186.33	$544,964.82	I. $59,221.51	10.9
Working exp.	363,248.69	337,332.66	I. 25,916.03	7.7
Net earn.	$240,937.64	$207,632.16	I. $33,305.48	16.0
Taxes, etc.	21,642.45	19,410.29	I. 2,232.16	11.5
Interest and divid'd, preferred stock.	164,873.63	110,124.68	I. 54,748.95	49.8
Total	$186,516.08	$129,534.97	I. $56,981.11	44.0
Balance.	$54,421.56	$78,097.19	D. $23,675.63	30.3

The Land Department reports sales for the year of 97,050.50 acres for $661,823.78—an average of $6.82 per acre. The payments were $71,066.01 in cash, $252,584.89 in contract notes, and $338,172.88 in the company's land stock. The original land grant was 854,429 acres, from which 293,205.66 acres have been sold. The land stock issued was $2,400,000, of which $645,533.43 have been canceled from land sales, leaving $1,754,466.57 outstanding. The company holds $551,942.43 in land contract notes, besides the unsold lands, against this balance.

Seattle & Walla Walla.—This company has executed a mortgage for $200,000 on its road to C. L. Dingley, J. J. McKinnon and W. J. Adams, trustees. The bonds will not be sold, but hypothecated to secure a loan of $100,000.

Selinsgrove & North Branch.—An effort is being made to resume work on this projected road, from Port Trevorton, Pa., to Mifflinburg, 40 miles, but it seems to meet with very little favor locally.

Sioux City & St. Paul.—This company makes the following statement for the year ending Dec. 31:

	1878.	1877.	Inc. or Dec.	P. c.
Freight	$258,033.59	$237,368.74	I. $20,664.85	8.7
Passengers	95,406.59	71,414.90	I. 24,991.69	35.0
Other sources	38,103.80	34,155.85	D. 1,052.05	3.1
Total	$387,543.98	$342,939.49	I. $44,604.49	13.0
Working expenses.	263,804.22	227,469.04	I. 36,335.18	16.0
Net earnings.	$123,739.76	$115,470.45	I. $8,269.31	7.2
Rents	19,646.00	22,400.00	D. 2,843.91	12.5
Taxes and insurance	15,737.98	16,009.15	D. 271.17	1.7
Intering, etc	36,885.39	30,411.90	I. 6,473.49	21.3
Total charges.	$72,269.46	$68,911.05	I. $3,358.41	4.9
Balance	$51,470.30	$46,559.40	I. $4,910.90	10.5

During the year the Land Department sold 64,901.26 acres for $414,177.17, an average of $6.38 per acre, for which there was received $80,812.72 in cash, $228,876.70 in bonds and $109,337.88 in buyers' notes. The entire land grant was 555,000 acres, from which 209,084.68 acres have been sold. The issue of land-grant bonds was $2,800,000, and there were on Dec. 31, $1,738,632.18 outstanding, the balance having been canceled from land sales. The company has $146,565.22 in land notes on hand.

Somerset & Mineral Point.—The purchasers of this road at the recent foreclosure sale have organized the Somerset & Cambria Railroad Company. They have decided to extend the road from its present terminus at Somerset, Pa., northward to Johnstown, about 28 miles, opening up some valuable iron ore deposits. The Cambria Iron Company, at Johnstown, takes a considerable interest in the new company. The road is now in operation from Somerset south by west to the Pittsburgh & Connellsville at Mineral Point, nine miles.

Springfield, Jackson & Pomeroy.—Mr. James Emmitt has undertaken the task of raising $600,000 to pay off the debts of this company and complete the road. If he succeeds, he is to have a controlling interest in the company.

Later advices state that, Mr. Emmitt seeing no prospect of raising money immediately, the board decided to ask for the appointment of a receiver. This was done, the Court granting the application and appointing Mr. William N. Whitely, late President of the company. The Court stated that it would authorize the payment of debts for wages and supplies incurred within four months, and of scrip issued for such claims.

The road is of 3 ft. gauge, and is in operation from Springfield, O., east by south to Jackson, 108 miles.

Tennessee State Railroad Bonds.—Some of the holders of Tennessee bonds, issued in aid of railroads, despairing of securing payment from the state, have begun suits to enforce the liens which they claim upon the railroads. Most of the companies have discharged their debts to the state in bonds of other issues, but the present claim is that the state was only indorser on the bonds, and that the roads were not relieved from the lien by the payment of the debt, unless it was made in the bonds issued to them in the first place.

A telegram from Nashville, Jan. 25, says: "Edward L. Andrews, attorney, in connection with Judge George Hoadley, of Cincinnati, with Charles O'Conor, counsel and adviser in New York, yesterday filed bills in Memphis against the Memphis & Charleston Railroad; Memphis, Clarksville & Louisville; Mississippi Central; Mobile & Ohio; Memphis & Ohio; and at Nashville to-day against the Louisville & Nashville and its branches, Southeastern, Central Southern, Tennessee & Alabama and Nashville & Chattanooga, Nashville & Northwestern, McMinnville & Manchester, Winchester & Alabama. On Monday he will file at Knoxville bills against the East Tennessee, Virginia & Georgia, Knoxville & Kentucky, Rogersville & Jefferson and Cincinnati, Cumberland Gap & Charleston railroads. The bill applies for a receiver to collect the revenues to pay the back interest on the bonds, some of which fall due in 1892. The amount of bonds having lien and outstanding against the roads are as follows: Cincinnati, Cumberland Gap & Charleston, $377,000; East Tennessee, Virginia & Georgia, $2,339,000; Memphis & Charleston, $841,000, making a total under Wilson's system of roads of $3,557,000; Louisville, Nashville & Great Southern, embracing itself and branches, including the Memphis, Clarksville & Louisville, Memphis & Ohio, Tennessee & Alabama and Central Southern, $3,169,000; Nashville, Chattanooga & St. Louis Railway, embracing the Nashville & Northwestern, McMinnville & Manchester and Winchester & Alabama, $2,381,000; Mississippi Central, $488,000; Mississippi & Tennessee, $105,000; Mobile & Ohio, $960,000. There is 21 per cent. of accrued interest on bonds amounting to $12,453,000 now outstanding, besides $2,433,000 funded bonds. The announcement to-morrow morning of the filing of these bills against the entire railroad system of the state will have a startling effect, because it will fall like a thunderbolt from a clear sky. The bill was not filed until a late hour this evening."

Texas & Pacific.—The Parker County Construction Company, which is building the extension of this road from Fort Worth, Tex., west to Weatherford, has now let all the contracts for grading, and expects to have the work done by the end of April.

Toronto, Grey & Bruce.—This company defaulted on the coupons due in London, Jan. 1. A general meeting of bondholders is to be called soon.

Troy & Boston.—This company is reported to be seriously embarrassed by the operations of D. Thomas Vail and Daniel Robinson, its President and Vice-President, who have broken down the Merchants' & Manufacturers' National Bank, of Troy, and the Schaghticoke Woolen Mills, both of which they controlled and managed.

Troy & Greenfield.—The manager's report for October is as follows:

Total receipts	$31,902.29
Proportion (two-thirds) for commonwealth	21,268.20
Expenses	5,881.12
Net balance	$15,387.08

Of the gross receipts, $26,247.97 were contributed by the Fitchburg, and $5,654.32 by the Troy & Boston. There were 5,546 loaded cars hauled over the road, of which 3,951 went eastward, and 1,595 westward.

Union Pacific.—The statement of the Land Department for 1878 is as follows:

	Acres.	Amount.
Sales to Dec. 31, 1877	1,318,279	$5,717,125
Sales for year 1878	318,904	1,557,082
Total to Dec. 31, 1878	1,637,183	$7,274,207
Interest received on contracts		592,750
Total receipts		$7,866,957

The total issue of land-grant bonds was $10,400,000, of which $3,516,000 have been bought and canceled, leaving $6,884,000 outstanding. There are on hand $370,000 in cash and $3,814,214 in land contracts, besides the unsold lands.

Utah & Pleasant Valley.—This narrow-gauge road is to run from the Utah Southern at Springville, Utah, southeast through the Spanish Fork Cañon to the Pleasant Valley coal mines. It will be about 60 miles long, and of 3-ft gauge. There are now 26 miles of the road graded and 14 miles of iron are laid.

Valley, of Ohio.—Track is reported laid on this road from Akron, O., northward seven miles.

The contract with Walsh & Monahan to complete the road has been terminated, the company agreeing to pay the balance due them. It is said that the company will not make another contract, but will do the work directly. The contractors claim that their failure to finish their work by Jan. 1 was largely due to the delay of the company's engineers in making out and preparing the work. They also complain that the company did not pay them the bonds as agreed, but retained not only the usual 10 per cent. on the monthly estimates, but also the 25 per cent. payable in bonds by the contract.

Washington City, Virginia Midland & Great Southern.—At a meeting of bondholders in Richmond, Va., Jan. 22, it was unanimously resolved that the various classes of bondholders should act together in securing a foreclosure of the mortgages through the suit now pending, and that a committee be appointed to represent the bondholders in the suit and to arrange a plan for the purchase and reorganization of the road, and also to agree upon terms with the first-mortgage bondholders. They also agreed to pay assessments of $2 per $1,000 on Orange & Alexandria second-mortgage bonds, $3 on third-mortgage, $4 on fourth-mortgage, $2 on Orange, Alexandria & Manassas first-mortgage and $5 on second-mortgage bonds, the committee to have power to double the assessment, if necessary. The committee chosen consists of Messrs. Peter V. Daniel, Jr., and John L. Bacon, of Richmond, Va.; Richard F. Merrick, of Washington, and Douglas H. Gordon, of Baltimore.

Western Maryland.—The Baltimore Finance Commissioners have recommended that the City Council pass the ordinance authorizing the adoption of the proposed settlement with the second-preferred bondholders. The Baltimore *Gazette* says of the agreement:

"The amounts paid by the city under the first mortgage, and the amounts due the city and individual bondholders on the second-preferred mortgage, are placed on equal footing, drawing interest at the same time, while the original first-mortgage indebtedness (payment of interest on which was announced to begin Jan. 1, 1879) still retains its precedence of all other mortgages. The first mortgage amounts to $600,000, of which $400,000 is unindorsed and $200,000 indorsed by the city. The payment of interest on the entire first mortgage relieves the city annually of the payment of $12,000. These payments by the city amounted up to Jan. 1, 1879, to $120,000, which will be funded, together with $118,000 of coupons on the city's second-preferred and the $139,000 coupons due to individual second-preferred bondholders, making the amount to be funded, $377,000, of which the city will possess $238,000 of the usual certificates of funding, or, if found practicable and preferred by the holders, coupon bonds of a new series, having as their basis the coupons in escrow, such bonds to carry all the powers of the certificates of funding."

Western Union.—Default was made Feb. 1 on the coupons then due on the $3,500 first-mortgage bonds of this company. The officers of the company say that it has been carrying a heavy floating debt; and that the default was made because the company had not the money on hand to pay and parties who had previously advanced money to pay the coupons declined to do so again, believing it unsafe, especially as one of the largest stockholders (the City of Glasgow Bank) is now insolvent.

The company has 212¾ miles of road, a main line from Racine, Wis., to Rock Island, Ill., with two short branches. Its only funded debt is the $3,500,000 first-mortgage bonds, on which default has just been made. The Chicago, Milwaukee & St. Paul Company holds a controlling interest, just over half, in the stock, and the road has been worked

in its interest, though the officers of that company claim that it is not in any way involved in the default. The City of Glasgow Bank, which recently failed, is also a large holder of the stock and the chief holder of the bonds. The reported net earnings of the road for five years past have exceeded the annual interest charge.

Worthington & Sioux Falls.—The following statement is made for the year ending Dec. 31:

	1878.	1877.	Increase.	P. c.
Gross earnings	$102,315.80	$49,476.51	$52,839.29	106.7
Expenses and taxes	48,117.50	22,236.53	25,880.97	116.6
Net earnings	$54,198.30	$27,239.98	$26,958.32	99.1
Interest, etc	716.34	275.42	440.92	160.3
Surplus	$53,481.96	$26,964.56	$26,517.40	98.2

At the commencement of 1878 the road was opened from Worthington, Minn., to Beaver Falls, 42 miles; about July 1 it was extended six miles, and, on Aug. 1 was opened to Sioux Falls, 63 miles from Worthington.

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Delaware, Lackawanna & Western.

This company, with 195.80 miles owned and 463.15 miles leased, besides large coal properties owned and controlled, makes no detailed report, but the following brief statements for the year 1878 are published:

The condensed balance sheet at the close of the last two years is as follows:

	1878.	1877.	Inc. or Dec.
Stock	$26,200,000	$26,200,000	
Bonds	5,887,100	3,015,100	I. $2,872,000
Net floating debt		1,693,170	D. 1,693,170
Surplus	4,346,125	4,305,415	I. 40,710
Total	$36,433,225	$35,213,685	I. $1,219,540
Contruction	28,760,904	28,817,018	D. 56,114
Materials on hand	838,271	983,402	D. 145,131
Stocks and bonds	5,155,956	4,608,400	I. 547,256
Changing gauge	863,644	804,865	I. 58,779
Net surplus	814,750		I. 814,750
Total	$36,433,225	$35,213,685	I. $1,219,540

The bonded debt consists of $1,633,000 second-mortgage bonds; $600,000 convertible bonds; $587,100 Lackawanna & Bloomsburg bonds, and $3,067,000 consolidated bonds. The amount of consolidated bonds outstanding was increased $2,872,000 during the year; there were no other changes. The following statement is given of securities owned, chiefly those of leased lines, and rated at par value:

Del., Lacka. & Western stock	$979,300
Syracuse, Binghamton & New York stock	1,575,000
Valley R. R. stock	747,000
Utica, Chenango & Susquehanna Valley stock	581,100
Warren R. R. stock	10,000
Morris & Essex stock	319,850
" " consolidated bonds	1,277,000
Greene R. R. bonds	185,000
Sundry stocks and securities	639,575
Total, par value	$6,313,825

The income account for the year was as follows:

Transportation Department receipts		$7,611,884
Coal sales		6,509,914
Miscellaneous		360,986
Total		$14,482,784
Expenses, Transportation Department	$4,065,916	
" Coal Department	6,677,708	
" barges and sundries	87,726	
		10,831,350
Net receipts		$3,651,434
Interest account	$411,966	
Rentals of leased lines	3,198,759	
		3,610,725
Balance to income account		$40,709
Balance, surplus Dec. 31, 1877		4,305,416
Balance, surplus Dec. 31, 1878		$4,346,125

According to this statement the net transportation receipts were $3,545,968, while there was a loss of $167,794 on the Coal Department. The company's statements for two years compare as follows, including miscellaneous receipts and expenses with transportation:

	1878.	1877.	Inc. or Dec.	P. c.
Net transportation earnings	$3,819,228	$4,401,851	D. $582,630	13.2
Losses on coal	167,794	1,922,661	D. 1,754,867	91.3
Balance	$3,651,434	$2,479,197	I. $1,172,237	47.3
Interest	411,966	201,957	I. 210,009	104.0
Rentals	3,198,759	3,185,261	I. 13,497	0.4
Total charges	$3,610,725	$3,387,219	I. 223,506	6.6
Surplus		$40,709		
Deficit			$908,022	

The surplus this year, though only 0.155 per cent. on the stock, was an improvement on the deficiency of last year, which was 3.46 per cent. on the stock. A statement of the company's condition at the close of the year is as follows:

Coal bills, agents' accounts, etc		$1,631,610.27
Advances on coal to be delivered		465,562.43
Advances to leased roads		299,083.35
Bills receivable on hand		27,874.60
Coal on hand		387,499.27
Cash		199,712.57
Total assets		$3,011,292.49
State taxes, payable by May 1	$203,019.51	
Vouchers and accounts payable	434,694.20	
Interest accrued to Dec. 31	141,489.82	
Rentals payable on and after Jan. 1	1,041,502.60	
December pay-rolls, etc	225,734.92	
Bonds and mortgages on real estate	150,101.13	
		2,196,542.18
Balance, net surplus		$814,750.31

The company has no bills payable or demand loans outstanding. The value of materials on hand, Dec. 31, was $838,271. The financial condition has apparently improved during the year, though the funded debt has been considerably increased. It is still, however, small in comparison with the stock.

It is to be regretted that the company does not publish a detailed report, which would be of much interest.

The total coal tonnage was 2,571,470 tons, an increase of 201,590 tons, or 8.5 per cent., over 1877. Only 12 out of the company's 18 collieries were worked during the year, and only an average of 137½ days' work was done at each of the 12, or about 11½ days per month for each colliery worked, and 7½ days per month for each colliery owned. At the mines leased or contracted about the same average of work was done, so that the tonnage could have been increased to 5,000,000 tons without difficulty.

United States Rolling Stock Company.

The report for the year 1878 shows the company to have owned at the close of the year the following pieces of rolling stock, in service or idle on the last day of the past two years.

	In service.	Idle.	Total Dec. 31, 1878.	Total Dec. 31, 1877.
Locomotives	53	48	101	104
Passenger cars	32	29	61	65
Combination cars	2	2	4	4
Baggage cars	13	8	21	23
Box cars	2,007	105	2,112	2,035
Stock cars	402	87	489	501
Gondola cars	763	144	907	1,016
Refrigerator cars	136	2	138	130
Oil tank cars	99	31	130	130
Dump coal cars	25	....	25	35
Flat cars	116	9	125	125
English coal cars	....	26	26	26

Compared with the previous year, this shows a *decrease* of 3 locomotives, 4 passenger cars, 2 baggage cars, 12 stock cars, and 109 gondola cars, and an *increase* of 77 box cars and 8 refrigerator cars. The decrease has been in the kinds of rolling stock for which experience has shown that there is very little demand; the increase in that for which the demand is greatest and most constant.

The balance sheet is as follows:

Assets.

Construction: total cost of stock	$5,011,014.10
Current balances due from lessees	156,273.21
Sundry debtors	2,560.24
Cash and cash assets	427,081.01
Chicago works and materials	205,351.10
Urbana buildings and tracks and materials	97,278.02
Office furniture and fixtures	2,850.00
Suspended accounts	1,215,444.13
Total assets	$7,117,851.81

Liabilities.

Capital account, total share issue	$5,000,000.00
Reserve account to Dec. 31, 1877	485,638.39
Dividends uncalled for	2,456.33
Bills payable	
Chicago mortgage	
Sundry creditors, due for current supplies, pay-rolls, etc	88,635.27
Insurance fund	22,619.25
Reserve in suspense	1,215,444.13
Income account, applicable to dividend and reserve*	215,626.53
Total liabilities	$7,117,851.81

* Exclusive of dividend No. 10 already paid.

Comparing with the balance sheet of the previous year we find in the assets

An Increase

In current balances due from lessees		$9,561.11
Cash and cash assets		16,771.67
Chicago works and materials		57,078.99
Urbana yards, etc		8,970.36
Office furniture and fixtures		254.34
		$92,636.47

A Decrease

In construction (cost of stock) of	$36,060.75	
Sundry debtors	919.66	
Suspended accounts	551.16	
		37,531.57
Total increase in assets		$55,104.90

In liabilities the changes are:

Increase:

Reserve account		$80,870.80
Dividends uncalled for		253.19
Sundry creditors (current supplies, pay rolls, etc.)		50,999.66
Insurance fund		8,400.00
		$140,523.65

Decrease:

Bills payable	$45,544.39	
Reserve in suspense	551.16	
Income applicable to dividend and reserve	39,323.20	
		85,418.75
Balance, increase of liabilities		$55,104.90

What is called "suspended accounts" in the assets, and "reserve in suspense" in the liabilities, consists almost wholly, we believe, of balances claimed as due under the old contract with the Atlantic & Great Western Railroad Company, which that company refuses to pay. The decrease in construction agrees with the reduction in cars owned; and the chief increase in assets is in the Chicago shops and the Urbana yards. The decrease in bills payable is a little more than balanced by an increase in current debts for materials, wages, etc.

The aggregate changes are very small. The reserve at the beginning of 1878 was nearly 10 per cent. on the first cost of the stock, and probably not far from 18 per cent. on the amount now necessary to replace it. If the usual March dividend is made from the surplus income on hand at the end of 1878, then this reserve will be further increased by $93,000, making it something like 20 per cent. on the present cost of renewing the stock. The stock, however, is continually being repaired and renewed at the charge of income.

The income shows:

Income Derived from

Rental		$365,530.90
Mileage		155,658.62
Interest		11,374.08
Balance of profit on work done for others at Chicago Works		1,863.46
		$534,427.06

Charges Against Income.

Repairs of rolling-stock not paid by lessees	$93,671.40	
Repairs buildings and tracks	610.66	
Narrow gauging	1,480.84	
Freight account	5,826.86	
Legal expenses	14,520.97	
Taxes (not paid by lessees and on Insurance Chicago & Urbana properties	11,994.82	
	10,228.99	
General expenses	79,808.39	
Storage	916.23	
Loss by uncollectable accounts	$1,397.80	
Loss by depreciation on furniture	328.66	
	1,726.46	
		220,800.53
Balance, net income		$313,626.53
Of which dividend of 8s. per share, paid Sept. 1, absorbed		98,000.00
Leaving balance available at end of 1878		$215,626.53
The dividend of 10s. per share recommended for March 1, will absorb		122,346.99
Leaving to be added to permanent reserve		$93,279.54

Comparing gross and net earnings for a series of years, we have:

Year.	Gross earnings.	Expenses.	Net earnings.
1875	$487,107.37	$133,529.73	$353,577.64
1876	572,943.32	142,691.93	430,251.39
1877	586,369.78	228,380.05	357,989.73
1878	534,427.06	220,800.53	313,626.53

The income contains some items, such as interest not received from the use of rolling stock, but only a small amount. The earnings have been greatly affected by the relations of the company with the Atlantic & Great Western, which have varied considerably, and have been generally different from the relations with other companies. It has been almost the only customer for locomotives and much of the time for passenger cars. This has had considerable effect on the changes of earnings from different kinds of rolling stock, which are shown below for five years:

Earnings from	1875.	1876.	1877.	1878.
Locomotives	$69,985.85	$104,509.69	$77,047.83	$84,550.36
Cars:				
Passenger	39,476.81	52,442.17	28,846.09	35,542.88
Combination	2,366.07	2,529.60	1,975.94	1,596.32
Baggage	8,766.65	5,940.28	5,515.82	6,954.67
Box	125,497.51	161,827.42	145,785.22	142,340.90
Stock	66,139.46	69,980.87	1,279.48	2,228.73
Gondola	82,457.33	80,644.15	60,026.93	56,743.54
Oil-tank	17,055.06	22,811.34	10,175.44	8,971.43
Flat	13,491 96	13,218.72	4,582.56	4,582.56
Dump coal	4,810.28	2,587.56	1,725.00	1,725.00
Refrigerator			9,590.02	20,777.51
Car mileage	44,263.92	36,775.30	231,397.15	155,658.62
Total	$474,220.40	$555,267.10	$557,947.48	$521,671.52

From this it appears that the average earnings per locomotive and vehicle owned were in 1878:

Locomotive	$837	Gondola	$63
Passenger car	583	Dump coal	69
Combination car	399	Oil-tank	69
Baggage car	331		

The earnings of the other and more numerous classes of vehicles is complicated by the fact that they are represented partly by car mileage, and that the latter is not reported separately for different classes of cars. But box cars, stock cars and refrigerator cars, and perhaps also oil-tank cars, run for the mileage of ¾ cents a mile allowed for foreign cars, and are not otherwise rented. If we take these three classes of cars and divide the mileage receipts by their aggregate number, and add to it the average other rental received by each car of the class, we will have approximately the average earnings of the cars of these classes:

	Rental.	Mileage.	Total.
Box car	$67.40	$56.60	$124
Stock car	4.40	56.60	61
Refrigerator car	150.40	56.60	207

The earnings were reduced somewhat by the necessity of having an unusually large number of cars in the shops to be rebuilt, aside from those which were changed from the 6-ft. gauge to the standard. The stock has now reached the age when probably the full average amount of repairs and renewals is necessary every year, which has not been the case heretofore.

The President, Mr. James B. Hodgskin, says:

"The accounts herewith submitted of the business of your company for the year 1878, show a net income for the year of $313,626.53, or nearly 6¼ per cent. upon the tota share capital.

"The dividend paid Sept. 1, 1878, absorbed $98,000, leaving $215,626.53 now disposable. Out of this your board recommend the payment of the usual March dividend of ten shillings per share, which requires $122,346.99, leaving $93,279.54 to be carried to the permanent reserve.

"The year has been a fairly prosperous one. We have had no loss of any kind to deplore. Our relations with our lessees have been unusually satisfactory. The equipment in *permanent* service with prompt-paying lessees has again materially increased. With the exception of the several long-standing law suits, in which the company is pressing for large sums due to it, you have now no complications of any kind.

"As compared with the previous year the amount carried to permanent reserve shows a decline of $35,660.19, which is the real falling off in the result of the year's business. It is due mainly to the fact that during the last six months of the year nearly the whole broad-gauge freight equipment heretofore leased to the Receiver of the Atlantic & Great Western Railroad has been returned to us, involving not only a heavy outlay for repairs, but also an average loss of at least two months' rental on the entire number of cars while undergoing reconstruction.

"Older shareholders who have accompanied the concern through the last five years of struggle and anxiety, due to our unfortunate connection with the company just mentioned, will not consider our almost final severance from that association as purchased at too high a price.

"But the large number of recent accessions to your ranks may need to be reminded that your company was originally created and controlled by and for the benefit of the Atlantic & Great Western Railroad Company and its promoters, who, after incurring a debt to us of over £200,000—which they have since sought to repudiate—left us in possession of a vast amount of depreciated broad-gauge rolling stock, which could not be used except on their line, and a large number of engines, for which no market could be found anywhere. The history of your company for the last five years has been chiefly a history of its struggles to disconnect itself gradually from the Atlantic Company, to find steady employment for its equipment elsewhere, and to restore its damaged and depreciated property to a condition of first-class efficiency. It has accomplished the desired result under difficulties of the gravest kind, the chief of which has been the steady decline in the current rates of rental for the lease of rolling stock. This decline during the last five years has exceeded 50 per cent., and on some kinds of equipment has reached 65 per cent. of the rates obtained in 1873 and 1874. But in spite of this decline in rates, the earnings of the company until the year 1878 have steadily increased, and the decline during 1878 has not been of serious magnitude. In the meantime we have become substantially free from our entangling alliance, and our business and income to-day are practically independent of the existence or non-existence of the Atlantic Company.

"We still have a long litigation to prosecute for the recovery of the enormous sums due us. This litigation is, of course, attended with expense and much labor; but I am sanguine of success in recovering ultimately the whole amount due. Whatever is recovered can be promptly reinvested in new freight equipment, which, at present cost, even at the reduced rates of rental, can readily earn a net income of 10 per cent. But if no portion should ever be recovered, our capacity to earn present dividends with the equipment now in service remains unimpaired.

"There still remain to us the very important number of idle and unprofitable locomotives and passenger coaches to get into service or to sell. With all my efforts, but little progress was made in that direction last year. The rapid revival in railroad business now going on throughout the country leads me to hope that the present year will witness better results. Every one of these locomotives and coaches when sold, even at a great sacrifice, will add to our net income, by enabling us to invest the proceeds in freight equipment, for which there is always an active demand at profitable rates.

"The question also presses on our attention whether the time has not come when we may legitimately and prudently enlarge our present operations, and, by employing additional capital without increased expenses, greatly add to our net profits. New capital is entering the business on all sides, and, by building equipment at present low prices, is able to compete with us to our disadvantage. Our past experience, our admirable shop facilities, our well-trained force of officers and mechanics would readily permit us to retain our lead, if we decide to take advantage of the opportunities daily offered for the employment of new capital.

"A new table has been added to those submitted with previous annual reports, showing at a glance the workings of the entire mechanical department of the company. It should

be borne in mind that most of our contracts provide for the maintenance of the equipment leased in perfect order and condition. Whenever lessees themselves make the repairs required by the contract, the company's equipment receives the benefit of such repairs and restorations, but without any record thereof appearing in our accounts. Only the repairs actually made by ourselves show on our books, and the amount of these is by no means a test of the aggregate amount of the repairs received by the whole of our equipment.

"The mechanical department account shows a total expenditure for repairs during the year 1878 of $172,502.09. Of this sum $79,384.96 were, or will be, recovered from lessees responsible therefor, and only $93,671.40 became chargeable to the year's income account. The repairs of both these classes include: thorough overhauling and heavy repairs of 25 locomotives, 33 passenger and baggage cars, 1,303 freight cars of different kinds, and 17 refrigerator cars; light repairs on 610 freight cars of various kinds; 251 new iron roofs in place of wooden; 3,151 new wheels; 175 new axles; and 638 new and improved draw-bars. In this way it will be seen that the repairs made in our own shops alone, and not counting those made by lessees (of which we have no financial record), are equal to an expenditure of 3½ per cent. on the original cost of our entire equipment at old prices. At the prevailing reduced value, and diminished cost of repairs, and in view of the fact that so large a part of our locomotives and passenger equipment remains idle, this expenditure alone is unquestionably in excess of the possible annual depreciation. As a matter of fact, the whole equipment is steadily maintained at the highest possible standard of condition and efficiency.

"The new constructions and betterments, as shown by the mechanical department account, amount to $57,845.76, and comprise six new refrigerator cars, twelve new box cars, ninety-six box cars converted from old gondolas, and a large variety of improvements and additions to almost every class of equipment. All of this new construction, as well as the additions to the works at Chicago and Urbana have been provided for out of the reserve.

"The accounts do not otherwise call for special comment, but it may be interesting to shareholders to know that your capital of £1,000,000 is owned by no less than 909 separate holders.

"The offices of the company have been recently removed to larger and more commodious quarters, without additional expense for rent.

"I am, as always, under great obligations to your Board of Trustees for advice and support, and to all the officers and employés of the company without distinction for faithful and cheerful performance of laborious duties.

"All the members of the present board are willing to serve you another year."

Boston & Albany.

This company owns a main line from Boston to Albany, 201.65 miles, and seven branches, 47.98 miles in all, making 249.63 miles owned. It leases the Ware River road, 49 miles, and the Pittsfield & North Adams, 18.65 miles, making 67.65 miles leased, and 317.28 miles worked. Train service is furnished to the North Brookfield road, 4.25 miles. This report is for the year ending Sept. 30, 1878.

The equipment consists of 243 engines; 190 passenger and 54 baggage and postal cars; 5,434 freight and other cars. Three engines were rebuilt and 397 freight cars added during the year.

The general account is as follows:

Stock ($80,119 per mile)	$20,000,000.00
Bonds ($28,072 per mile)	7,000,000.00
Unclaimed dividends and interest	33,085.50
November dividends and January rentals	837,500.00
Notes payable	507,434.75
Profit and loss	2,425,060.42
Total	$30,803,680.67
Road and equipment ($110,220 per mile)	$27,514,116.50
South Boston property	505,098.22
Hudson River bridges	475,485.00
Materials	1,130,944.07
Real estate and land	119,678.96
Balances due	495,483.83
West Stockbridge R. R. stock	13,000.00
Cash	549,874.09
	30,803,680.67

Changes in the accounts are very slight. Of the bonds, $5,000,000 bear 7, and $2,000,000 bear 6, per cent. interest.

The earnings for the year were as follows:

	1877-78	1876-77	Inc. or Dec.	P. c.
Passengers	$2,275,351.00	$2,386,471.84	D. $111,120.84	4.7
Freight	3,721,436.48	3,790,780.94	D. 69,344.46	1.8
Mails, etc.	636,745.93	602,357.25	I. 34,388.68	5.7
Total	$6,633,533.41	$6,779,610.03	D. $146,076.62	2.2
Expenses	4,413,997.27	4,612,765.95	D. 198,768.68	4.3
Net earnings	$2,219,536.14	$2,166,844.08	I. $52,692.06	2.4
Gross earn. per mile	20,913.81	21,367.91	D. 454.10	2.2
Net earn. per m.	6,995.51	6,829.44	I. 166.07	2.4
Per cent. of exp.	66.54	68.04	D. 1.50	2.2

The income account for the year was as follows:

Net earnings		$2,219,536.14
Interest	$485,158.95	
Dividends, 8 per cent.	1,600,000.00	
Pittsfield & North Adams rental, 5 per cent. on stock	22,500.00	
Ware River rental, 7 per cent on stock	52,500.00	
		2,160,158.98
Surplus for the year		$59,377.16
Surplus, Oct. 1, 1877	$2,380,395.07	
Less uncollectable accounts	14,711.81	
		2,365,983.26
Surplus, Oct. 1, 1878		$2,425,060.42

The traffic for the year was as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Train mileage	5,024,183	5,045,728	D. 21,545	0.4
Passengers carried	5,200,641	5,293,351	D. 92,710	1.8
Passenger mileage	101,221,995	103,278,126	D. 2,056,171	2.0
Tons freight carried	2,642,555	2,601,657	I. 40,898	1.6
Tonnage mileage	329,708,573	313,822,671	I. 15,885,902	5.1
Average receipt:				
Per pass. per mile	2.240 cts.	2.310 cts.	D. 0.070 ct.	3.0
Per ton per mile	1.129 "	1.207 "	D. 0.078 "	6.5
Average cost per ton or passenger per mile	0.829 "	0.883 "	D. 0.054 "	6.1

The passenger movement shows a decrease, but there was a considerable gain in tonnage mileage.

Improvements during the year include new storage sheds on the Back Bay in Boston; a new brick passenger-house at Brookline; a new engine-house at Worcester, and an iron truss bridge at Greenbush. A new wharf has been built at East Boston, connecting the two old wharves, and a large storage shed put up there. There were 16.15 miles new siding built. During the year 21.02 miles of steel rails were laid, making 416.70 miles of steel in the track, and leaving on the main line only 5.95 miles of iron or steel-topped rails to be replaced. All improvements have been charged to expenses.

Arrangements have been made to operate the Spencer road, a branch two miles long to the village of Spencer, now just completed.

The report says: "The movement of merchandise westward has diminished, while there has been a large increase in the quantity of freight coming east. The number of tons from Albany to Boston, and the total number of tons carried one mile over the road, have been larger than in any preceding year. We have suffered, in common with many of the other railroads, from an unwise and unnecessary competition in the transportation of both passengers and freight, which has, during a part of the year, on some lines, carried rates to the lowest point yet reached. It is a matter for congratulation and encouragement for the future that, notwithstanding these unfavorable and adverse circumstances, we are able to report so satisfactory returns of the year's business.

* * * * * * *

"The following table shows the rapid increase in the quantity of grain of all kinds, received into the East Boston elevator during the last five years:

1873-4	1,508,083 bushels.	1876-7	4,240,501 bushels.
1874-5	2,588,227 "	1877-8	9,763,280 "
1875-6	4,406,785 "		

"A recent accident to the engine in the elevator, which fortunately did not seriously interrupt the business of the road, has shown the necessity for an additional and more powerful engine, and a contract has been made with the Atlantic Works for a new engine and boiler, to be delivered during the winter. When this is completed, it is believed that the facilities and accommodations at East Boston will be ample for the business of the road and of the steamers for the present, and no further changes are contemplated.

"There has been paid to the commonwealth during the year the sum of $330,000, which sum was fixed upon as the approximate amount due for the area of South Boston flats, purchased of the commonwealth in 1869, after deducting certain credits and allowances to which the company claimed it would be entitled on the final settlement. The exact amount of these credits cannot be definitely determined at the present time, but it is hoped and believed that all matters of difference upon the subject will be satisfactorily adjusted. A contract has been made with Messrs. Dixon & Hall to go on with the filling of these flats during the present year, so far as can be done without wasting the filled material upon the adjacent flats of this commonwealth, or into the harbor.

"The road-bed and equipment have been maintained in excellent condition, and the additions to and improvements in the property have been amply sufficient to provide for any possible depreciation.

"On the 10th of December a heavy rain, accompanied with a violent warm south wind, falling upon about six inches of snow, causing a sudden and unprecedented flood in the Westfield River, caused serious damage to our road. The road-bed was badly washed and broken up, at intervals, for a distance of 10 or 12 miles. The total amount of the damage to the road-bed and bridges, it is estimated, will not exceed $20,000.

"The retirement of the Hon. C. W. Chapin, after a long and uninterrupted service of nearly twenty-five years, as President of the Western, and Boston & Albany Railroad companies, marks an era in the history of the corporation. The large and generally increasing business of the road, the growth and development of the property, at times keeping even pace with the demands of its business, the steadiness with which the stock has maintained its value and dividends, and the general prosperity which has attended the company during his administration, are the best evidence of the prudence, wisdom, fidelity and financial ability with which he administered its affairs."

Galveston, Houston & Henderson.

This company owns a line from Galveston, Tex., northwest to Houston, 50 miles, forming the chief connection between the railroad system of Texas and its chief sea-port.

There is a bonded debt of $1,500,000, or $30,000 per mile. The following figures are from the reports presented at the recent annual meeting for the year ending Dec. 31, 1878:

The passengers and freight carried were as follows:

	1878.	1877.	Inc. or Dec.	P. c.
Passengers carried	55,055	68,192	D. 13,137	19.3
Tons freight carried	174,300	160,344	I. 13,956	8.7

The earnings for the year were as follows:

	1878.	1877.	Increase.	P. c
Gross earnings	$495,439.72	$454,304.56	$41,135.16	9.1
Expenses	310,844.37	275,624.42	35,219.95	12.7
Net earnings	$184,595.35	$178,680.14	$5,915.21	3.3
Gross earn. per mile	9,908.79	9,086.09	822.70	9.1
Net " " "	3,691.91	2,573.60	118.31	3.3
Per cent. of exps.	62.75	60.67	2.08	3.4

The earnings show a considerable increase, notwithstanding the loss in passenger traffic. Nearly all the business is through, there being only a light local traffic.

The earnings were all applied to payment of interest and to improvements of the road.

Richmond, Fredericksburg & Potomac.

This company owns a line from Richmond, Va., northward to Quantico, 81.75 miles, and leases the Connection Railroad in Richmond, 1.25 miles, making 83 miles worked. There are 7.18 miles of siding. The 46th annual report is for the year ending Sept. 30, 1878.

The equipment consists of 12 engines; 15 passenger, 4 mail and 6 baggage and express cars; 41 box, 33 flat, 25 wood and 6 caboose cars; 22 material cars.

The general account is as follows:

Stock ($18,748 per mile)		$1,532,628.60
Funded debt ($10,743 per mile)		878,241.57
Other debts		63,954.80
Profit and loss		547,553.52
Total		$3,022,378.49
Road and property ($34,682 per mile)	$2,835,268.80	
Debts due the company	184,102.23	
Cash	3,007.46	
		3,022,378.49

Of the stock $500,500 is guaranteed stock bearing 7 per cent. interest, except $19,400 at 6 per cent.

The traffic for the year was as follows:

Train mileage:	1877-78	1876-77	Inc. or Dec.	P. c.
Passenger	145,019	131,681	I. 13,338	10.1
Freight	30,700	31,283	D. 583	1.9
Total revenue	175,719	162,964	I. 12,755	7.8
Service	14,626			
Passengers carried	128,000	130,084	D. 2,084	1.6
Passenger mileage	5,846,319	6,485,724	D. 639,405	9.9
Tons express freight	2,825			
Express freight ton mileage	217,842			
Tons freight carried	45,499	37,159	I. 8,340	22.4
Tonnage mileage	1,805,832	1,712,378	I. 93,454	5.5

Locomotives ran during the year 218,123 miles; passenger-train cars, 752,202 miles; freight cars, 442,071 miles, and material cars, 212,007 miles. The average train was 4.08 passenger train cars, 13.40 freight, or 28.10 wood cars; the average train load, 44 passengers, or 59 tons of freight. Receipts per passenger per mile were 4.01 cents for through, 3.21 cents for local, 1.06 cents for commuters, 0.94 cent for through excursion, and 1.73 cents for way excursion, an average of 3.42 cents for all. Freight receipts were 8.50 cents per ton per mile for express, and 3.27 cents for ordinary freight. The cost per revenue train mile was 91.16 cents, against 108.50 cents the previous year.

There were laid during the year 7.8 miles of steel rails and 27,335 new ties; the usual repairs were made to bridges and some extra work done on culverts damaged by freshets. There are now 54.31 miles of flish-bar track, of which 8.84 miles are steel.

The earnings for the year were as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passengers	$200,352.16	$209,296.53	D. $8,944.37	4.3
Freight	78,385.95	84,052.37	D. 5,666.42	6.7
Mail, etc	35,534.40	29,664.14	I. 5,870.26	19.8
Total	$314,272.51	$323,013.04	D. $8,740.53	2.7
Expenses	160,174.07	176,804.58	D. 16,630.51	9.4
Net earnings	$154,098.44	$146,208.46	I. $7,889.98	5.3
Gross earn. per mile	3,786.42	3,891.72	D. 105.30	2.7
Net " " "	1,856.61	1,761.55	I. 95.06	5.3
Per cent. of expenses	50.97	54.73	D. 3.76	6.9

The income account, condensed, is as follows:

Cash on hand, Sept. 30, 1877		$12,979.54
Bills receivable, etc		7,711.98
Bills payable increased		35,019.28
Gross earnings		314,272.51
Total		$369,983.31
Additions to property	$11,440.56	
Debts paid off	39,672.88	
Expenses of road	160,174.07	
Interest and guaranteed dividends	111,711.83	
Profit and loss, old debts, commission, etc	43,976.51	
		366,975.85
Cash on hand, Sept. 30, 1878		$3,007.46

Included in profit and loss is $27,705 paid for the accident at Pinola in February last.

During a large part of the year three daily through trains were run, giving a large increase in mileage. The carrying out of the stockholders' resolution to renew the steamboat connection with Washington is postponed until a boat can be built large enough to transfer a whole train from Quantico to Shepherd.

St. Louis, Vandalia & Terre Haute.

This company owns a line from the Illinois state line near Terre Haute, Ind., to East St. Louis, 158.3 miles, with 25.9 miles of sidings. It is leased to the Terre Haute & Indianapolis Company, but the company makes a separate report for the year ending Oct. 31, 1878.

The equipment consists of 32 engines; 14 passenger and 8 baggage cars; 328 box, 116 stock, 75 platform, 229 coal and 15 caboose cars; 55 service cars.

The general account is as follows:

Stock ($24,814 per mile)		$3,928,015.70
Bonds ($28,421 per mile)		4,499,000.00
Unclaimed coupons and November coupons		95,865.00
Due lessee		141,942.57
Total		$8,664,823.27
Road and equipment ($52,607 per mile)	$8,327,709.21	
Cash, etc	3,525.97	
Income account, balance to debit	333,588.09	
		8,664,823.27

The work done was as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Train mileage	1,074,534	993,120	I. 81,414	8.2
Earn. per train mile.	$1.107	$1.235	D. $0.128	10.4
Net " "	0.171	0.302	D. 0.131	43.4
Passengers carried	204,058	218,140	D. 14,082	6.5
Passenger mileage	13,092,370	14,827,425	D. 1,735,055	11.7
Tons freight carried	659,765	631,281	I. 28,484	4.5
Tonnage mileage	58,722,821	50,618,136	I. 8,104,685	16.0
Av. rate per pass. per mile	2.493 cts.	2.512 cts	D. 0.019 cts.	0.8
Net per pass. per mile	*0.229 "	0.118 "		
Av. rate per ton per mile	1.088 "	1.206 "	D. 0.178 cts.	14.1
Net per ton per mile	0.169 "	0.298 "	D. 0.129 "	43.3

* Loss.

There was a decrease in all classes of passengers, but chiefly in through, and an increase in freight, chiefly in through business, the rate on which was only 0.803 cent per mile.

The earnings for the year were as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Freight	$638,730.43	$640,612.90	D. $1,882.47	0.3
Passengers	326,383.71	372,539.87	D. 46,156.16	12.4
Express, mail, etc	94,328.91	105,317.56	D. 10,988.65	10.4
Total	$1,059,443.05	$1,118,470.33	D. $59,027.28	5.3
Expenses	895,941.73	845,140.96	I. 50,800.77	6.0
Net earn.	$163,501.32	$273,329.37	D. $109,828.05	40.2
Gross earn. per mile	6,692.60	7,065.51	D. 372.91	5.3
Net earn. per mile	1,032.86	1,726.65	D. 693.79	40.2
Per cent. of expenses	84.57	75.55	I. 9.02	11.9

The lessee is allowed 70 per cent. for operating, so that its loss last year was $157,702.74, against $108,595.51 the previous year. From the gross earnings above are to be deducted $4,815.89 on division of business, leaving $1,054,627.16, of which 30 per cent., or $316,388.17 was the rental paid. The income account was as follows:

Rental		$316,388.17
Interest received		159.70
Total		$316,547.87
Interest, taxes, etc		352,113.52
Deficit		$35,565.65
Deficit, Nov. 1, 1877		298,022.44
Total deficit, Nov. 1, 1878		$333,588.09

The deficit is met by an advance from the lessee. The loss in earnings was due partly to a decrease in passenger business and partly to a decrease in freight rates, although there was a gain in traffic. Some loss has been felt from the withdrawal of the Illinois Central's St. Louis business, which used to come to this road at Effiingham, but it is doubted whether this business ever paid. There was a decrease in coal business of 21,170 tons, the coal carried last year being 231,816 tons.

The contract with the Indianapolis & St. Louis was annulled Feb. 1, 1878, the result being an increased competition for through business. Local as well as through rates suffered from competition, but have, it is hoped, nearly reached their lowest point.

During the year 2.1 miles new sidings were laid, several bridges rebuilt and some improvements made; 21.4 miles of track were relaid with steel, and 6.83 miles with iron rails, and 90,500 new ties used. There were 29 miles ballasted with gravel.

In addition to the deficit of rental in meeting interest, etc., the lessee advanced $27,793.33 to meet bills payable during the year.